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ELEMENTS OF LANDSCAPE GARDENING.

Number Five.

LAYING OUT THE WALKS.—GROUPING.

In the suggestions we have offered in previous numbers of the FARMER, in regard to the arrangement of masses of trees and the due subordination which the groups and specimens must bear to each other and to the grand central mass about the building, we have endeavoured to simplify the matter as much as possible. In the present article we propose to enlarge upon the subject somewhat more fully, and to explain, as well as we can in so brief a space, the object sought to be attained by the landscape gardener. It is perhaps proper to state here, and we cannot impress it too often upon all who desire to improve their grounds—whether that improvement be limited to a single acre or covers a much more extended area—that the principles that underlie and govern the laying out of grounds on a large scale are exactly the same as are applicable to the adornment of a single front lawn, or the limited stretch of land adjacent to it. The only difference is—so to speak—in the materials to be used. In the one case, where an extensive surface is to be planted, the masses and groups should partake, of course, of a bolder character, and the trees selected for this purpose must also be such as are, when full grown, the largest of their species. On the other hand, trees which attain only to a moderate height should be used in the decoration of grounds of a more contracted extent, whilst for lawns and their immediate surroundings, the improver must depend mainly upon shrubs and evergreens and upon trees of a medium size and of moderate growth. As examples of the latter, and for the better understanding of what we mean, we instance—the Judas tree, the white flowering Dogwood, the Laburnum, the Magnolia, the purple-leaved Beech, the Birch, the Japan Ginko tree, the Mountain Ash and, perhaps it is admissible to add, the Sassafras. Of the same class, among Evergreens, we cite the Norway spruce, Balsam or Balm of Gil-

lead, Hemlock, the white and yellow Pines, the Yew, the Cedar, and the several varieties of the Arbor Vitæ, although these last are not favorites with us, from the fact that their foliage turns of a dingy brown in winter.

The two leading objects of the landscape gardener are first to give to a limited area, by a proper distribution of his groups and masses, the impression of extent, and second, of variety. The former he seeks to attain by concealing the boundary line of the little domain and by serpentine walks, and by vistas radiating from certain given points through which the eye travels until it loses itself in the deep bays or recesses of the outer boundary, or is carried by judicious breaks or openings to the most favorable parts of the landscape beyond. It is, of course, of primary consequence that all unsightly objects should be planted out, and that, wherever the topography of the country will admit of it, the finest bits of the outer landscape shall be set in a frame-work of trees, as the instances are very rare in which an extended view does not present some harsh features, and moreover, a large extent of surface, however beautiful as a whole, when constantly before the eye, becomes monotonous, whereas if it be broken up into detached portions, revealing only its finest points, it is converted into a succession of pictures, as seen from the different windows of the house or from pre-arranged points in the walks or carriage drive. It is, therefore, important that the carriage drive and walks of a place however small it may be, shall be planned before the planting of trees commences, and that due regard be had, in laying off the curves, to the subsequent disposition of the groups and masses in connection with to the landscape beyond. On a level place offering no advantage of view or shut in on all sides by woodlands, the sole beauty and picturesqueness of the place will necessarily be limited to the grounds themselves, and can derive no aid from outside sources. In such cases—though they are comparatively rare with us, and need never occur where the

improver intends to build up a homestead and has the freedom of selection—the skill of the landscape gardener is much more severely taxed. Yet the difficulties he has to contend against are not insuperable. His efforts will then be directed towards creating in miniature those picturesque effects which he is debarred from attaining through the valuable assistance of the general landscape. But on places of this kind great care must be taken to avoid aiming at too much, and that, in seeking to give as great variety as the space to be improved will admit of, the whole surface shall not present a confused and tangled aspect. Breadth and simplicity are quite as much demanded in the laying off of grounds restricted by their surroundings as they are in those which have more extensive landscape advantages. In the latter, the groups and masses should be so arranged as to constitute merely the foreground of the picture; but in the former, they must be made to constitute the picture itself. In grounds of this character the walks should, as we have already said, be serpentine, and their curves should be varied as much as possible; care being taken in forming the curves that, in the different turns of the walk where the vistas are formed, the house, as the central object, shall be presented in its best aspect. Another point to be observed is that not only should the curves of a particular be concealed from each other, but that only one walk, when there are several, should be seen at a time. This result can readily be attained, in the first instance, by planting liberally with evergreens at or near the hollow of the curves, and in the second, by sinking slightly the different walks below the level of the sward. In planting up the curves judicious landscape gardeners advise that the groups shall not, as a general rule, be placed exactly in the centre of the curves, but rather on one side of them, because, in the view from the house, the vistas not unfrequently pass between two curves, and because also in those turns as seen from the lawn the greatest depth of grassy bay can be procured. To produce additional variety the walks should be shut up entirely in some places, and, where the place is small, a few bold openings leading to the deep and obscure recesses of the outer border will be much better than a great number of smaller ones.

THE BEST SHADE TREES.—For the beginner, we would say, plant, at first, native, well known hardy trees. These will include, generally, the white elm, the rock maple, silver, red, and black maples, the white ash, the white oak, chesnut, and perhaps a few others. To these we would add a few evergreens, such as white pine, balsam fir, black and white spruce, and arbor vitæ. Then we would go on with the Norway maple, English, Dutch and Scotch elms, Scotch larch, European mountain ash, Norway Spruce, Siberian arbor vitæ, and a few other foreign evergreens.

HINTS ON COUNTRY HOUSES.

Number Five.

The Sense of Fitness—Stone Houses.

We are about to touch upon the sense of fitness in the construction of houses generally, and also to enter a plea in favour of houses built of stone for occupation in the country, as being infinitely preferable to those constructed of wood, and if we take a proper view of the case—in the end, much more economical. It cannot be fairly denied that stone houses are much more comfortable than wooden ones; that they are cooler in summer, and warmer in winter, and that they will outlast a dozen dwellings made of the frailer material. We know it is common complaint that stone houses are damp; and it is certain that the softer and more porous kinds of stone do really absorb moisture by capillary attraction. But the remedy is as simple as it is comparatively inexpensive. All that is necessary is to lay the courses below the surface soil in cement and to interpose a layer of slates, a few courses above the surface. The latter however, where undressed stone is used, may be, if not wholly impracticable, yet unadvisable, but the same result may still be obtained in a different way. If the inner walls are furred with inch or inch and a half strips and then lathed and plastered, the dryness is perfect whilst the thin column of dead air interposed between the plastering and the wall, adds a further protection from the summer's heat and the winter's cold. Our improved styles of architecture, especially for country residences, originated with Downing, and it is his crowning merit that he succeeded in awakening and developing that popular taste for picturesque villas and cottages, which now prevails so generally among us. But the disciples of Downing have carried this passion for the picturesque, in many instances, to such extremes as to call for a protest from all thoughtful people. They have sacrificed truth and solidity of construction to theatrical effect, and to flimsiness of ornamentation. They have attempted to do with inch boards what could only be done properly with heavy timber, and what with gingerbread work on the apex of the roof, and under the eaves, and over the windows, and, in fact, every where that it ought not to be, they have succeeded in carrying his sensible teachings to the verge of the ridiculous. Now many of these toy houses are pretty enough to look at, and if simply designed for toy houses would merely provoke a smile. But as houses for people to live in they are as pretentious as they are absurd. Would we then go back to the bare, oblong, unsheltered and comfortless structures that were in vogue twenty years ago?—Not at all. Such houses were altogether devoid of

taste. They were simply four walls thrown together, and windows and doors cut in them. Nevertheless they had one great merit; there was no pretence about them. Ugly as they were and are—for there are large numbers of them still scattered throughout the country—they fairly expressed the limited ideas of their builders. Our new fangled edifices, with towers that no one ascends and gables to dormitories that no one can sleep in, are illustrations in some sort of a better taste, but it is of a taste that has been perverted from the true intent and meaning of that word, and which, overleaping its bounds, has been carried to the opposite extreme. We are not in favour of paste-board houses let their shape be what they may. Excessive ornamentation does not change the character of such houses. As a feature in the landscape they may be an improvement over the old white washed oblong thing; but as structures to live in they are a standing reproach to that sense of fitness which should govern us quite as much in what we build as in what we do or say. We hold to the doctrine that truthfulness of purpose is quite compatible with picturesqueness of effect, and, to this end, we would do away with all shams. In a country where wood is cheap houses will be built of wood for many years yet to come. So be it. We do not question their propriety. Nor do we object to the use of suitable details adapted to the material, provided that they serve a purpose, and are properly subordinated. We regard projecting roofs and framed brackets descending from the rafters and porches, and also verandahs and balconies, as great improvements on the old style of building, and as admirably suited to our climate. It is not the use, but the abuse of these excellent adjuncts against which we protest. Verge boards an inch thick and carved into fantastic shapes, are ridiculous, and the same may be said of the drop work of window hoods and gables, and of profuse ornamentation of the Dutch toy character generally. The simplest cottage may have its projecting roof, and it will look all the better for it; but the brackets or cantilevers should be of solid stuff. The porch is even more desirable; but it ought to be plain and sturdy looking, and such should be the character of the entire finish of the house both outside and within. Where stone is to be had, either on the place or from quarries adjacent to it, it is decidedly the best material for country dwellings of all kinds, from the stately villa to the humblest cottage. It is confessedly more durable than either wood or brick. Its colour harmonizes with the landscape, whilst that of brick, unless painted, is an eye sore and an abomination. Stone carries with it an air of dignity and stability; and, unlike wood, when its walls have once settled, it neither shrinks nor warps, nor suffers decay. There is no cracking of

walls, no bending of timbers, no rotting, and instead of becoming weaker it grows stronger with age, from the hardening of the mortar and its more thorough incorporation with the stones that it binds together. As to the economy of stone, we believe, at the present prices of lumber, it is quite as cheap, if not actually cheaper than wood; and as to the comfort of houses built of stone, when compared with those constructed of wood, the odds are altogether in favour of the stone.

Two Methods of Making Superphosphate of Lime.

1st—THE SHORTER METHOD. The bones should be reduced to powder by pounding or grinding, for the finer they are the quicker they can be dissolved by the acid. Take this powder, add the same weight of water and wet every particle. Then take sulphuric acid, equal in weight to half the weight of bones, and stir it rapidly, so that it may be incorporated with the water and bones as quickly as possible. This should be allowed to remain a few days that the acid may have time to dissolve thoroughly the bone dust. It will then be of a pasty or salvy consistency, and required to be mixed with some article which will act as a drier and divider, so that it can be handled conveniently, and this article must be something that will deprive the mixture of the acid, in combination. Plaster, charcoal powder, dried muck, or in lieu of either, dry soil will answer. You will then have a dry powder containing superphosphate of lime, and if you weigh your drying material you can tell the amount of bone mixture.

2D—THE LONGER METHOD. This mode is based upon the principle of using whole or unbroken bones and giving them plenty of time to be fully dissolved by the acid. It will probably be found to be the most practicable by farmers in general, who have not the conveniences for crushing or grinding the bones. Sink a hogshead in the ground half of its length, in some convenient place under cover, bank it up nearly to the top with earth, and throw into it from time to time all the bones and pieces of leather which come to hand. Six or eight weeks before you wish to make use of the manure, pour on the bones, water and sulphuric acid in the proportions of twenty gallons of water to a carboy of acid until the bones are covered.

The hogshead should be covered tightly, as there will be considerable heat excited, and at the end of five or six weeks, if the acid be good, the bones will be fully dissolved and ready to be dried as above described.—*Maine Farmer.*

IRON pipes, when laid in the ground, and packed all around with dry clay, do not rust. The clay protects the metal from the action of oxygen in a moisture and air,

Our Agricultural Calendar.

Farm Work for May.

The backwardness of the season has had a serious effect upon the necessary preparation and seeding of spring crops, and unless, at this time, now that the weather, though cool, is becoming comparatively settled, the most strenuous efforts are made to push forward the work which has yet to be done, the prospects for the future harvest are not encouraging. What with the scarcity of labour and the consequent diminution of the area of production there seems to be no doubt that the price of cereals must rule high during the coming year, and it therefore becomes a matter of the greatest importance that such lands as are brought under cultivation shall be put in a condition not only to force forward the oat and barley crops, but also to render these and the corn crop as productive as possible. Nothing now that the farmer can do will pay him a better interest than a liberal use of manures and fertilizers. He must limit the number of acres to the capacity of his available force, and must make those acres return two-fold, or three-fold—if he can—their ordinary yield. All slovenly culture must be avoided; deep ploughing; thorough and conscientious tillage, and the aid of domestic and commercial fertilizers must be resorted to for the purpose of accomplishing this desirable result. Our suggestions in regard to the work for the month are as follows:

PLANTING CORN.

We have already given, in previous numbers of the Farmer, the necessary directions for the cultivation of this most important crop. It may be necessary however, to recapitulate the leading points to be observed.

As to the Soil.—The best soil for a corn crop is a light alluvial—bottom lands enriched by the wash of the adjacent hills and by the deposit left by overflowing streams are best adapted to the production of heavy crops of this grain. Next to these are sod lands, broken up deeply in autumn and partially decomposed by the action of the frosts and rains of winter. But whatever may be the soil it is essential to the vigorous and profitable growth of this plant that it shall be made as rich as possible, either by barn yard manure, by composts, or by commercial fertilizers containing a considerable quantity of the phosphates. Lime, potash and the phosphates are found in abundance in the grain and stalk of corn, and where these, or either of them, are wanting, they must be supplied or the yield will be deficient.

As to preparation.—Next to rich land, deep ploughing and complete pulverization are of the utmost

importance in the successful cultivation of corn.—The roots of corn must have a loose and friable soil to ramify in laterally, in search of food, and great depth of soil to allow the tap roots to descend in search of both food and moisture. Air and water the plant must have, or it will not thrive; soluble food in abundance it must also have, for it is a gross feeder, and demands for its rapid growth a constant and unfailing supply of the proper kind of nutriment. If these are furnished and the after culture is carefully conducted, so as to keep the soil as light as an ash heap and the plants free of every species of weed, the work will be well done, and under ordinary circumstances, will yield an adequate compensation.

Laying Off.—The usual distance between the rows is four feet each way, and experience has demonstrated that in all soils of ordinary fertility this distance, leaving two stalks in each hill, is the best that can be adopted. Where the land is rich in all the substances that are necessary to the vigorous growth of corn, closer planting will produce, under favorable circumstances, a much larger crop. But unless the soil is really fertile, the hills should not be less than four feet distant from each other.

After Culture.—This, as we have already stated, consists in a thorough pulverization of the soil, never permitting the surface to become crusted over by the sun and rain, but keeping all the ground clean—hoeing about the plants and making the land as loose as possible.

OATS.

Oats may yet be seeded up to the 10th of the month, but the prospects of a favorable yield are sensibly diminished by the lateness of the season. Still, if the ground is in good heart, and it should be desirable to put in a field of oats so as to keep up the system of rotation, a moderate product may be harvested; with regard to preparation, manures, and the requisite quantity of seed to the acre, we refer the reader to the March and April Nos. of the Farmer.

ROOT CROPS.

Mangold Wurtzel.—Sugar Beet.—This coarse but nutritive root is not generally grown with us, although its value is highly appreciated in Europe.—Indeed, most persons will prefer the sugar beet to the mangold wurtzel as containing more of the fat forming elements. Still, the mangold wurtzel is a hardy root, and under proper cultivation will produce remarkably heavy crops, and an acre or two may be seeded to advantage. Like all the other varieties of the beet, the seed of the mangold wurtzel should be soaked in tepid water for twenty-four hours before being drilled in. The quantity of seed required for an acre ranges from three to four pounds, and the mode of cultivation is exactly similar to that for carrots and parsnips.

PUMPKINS.

Plant these between the 1st and the 10th of the month—and if planted in hills by themselves, and not amongst the corn, as is the common practice—put in each hill a good shovelfull of rich stable manure—cover with earth, flatten down the crown of the hill, and plant some half a dozen seeds to each hill, withdrawing the weaker ones after the plants have come up. Not more than two vines should be left to the hill. Dust the young plants frequently in the earlier stages of their growth with a mixture of slaked ashes and soot, to get rid of the striped bug. Keep the pumpkins free of weeds throughout the season, occasionally drawing a little fresh earth about the roots of the vines. When the vines have bloomed, pinch off the leading shoots, and in laying by leave the soil clean and loose.

MILLET.

Although we prefer, individually, broadcast corn to millet, as a forage crop, there are nevertheless, many who like to make up with millet, rather than corn, for any deficiency in the hay crop. To such we would remark that the ground to be seeded in millet should be heavily manured and deeply and thoroughly ploughed and harrowed. The seed should be put in by the 10th of the month. Sow three pecks of millet seed to the acre.

WATER MELONS—CANTELEUPES—MUSK MELONS.

Sow the seeds of these the first week of the month. The hills for melons should be manured heavily with the richest stable manure—hog manure is better—and should be made up six feet apart. The hills for musk melons and canteleupes should be but four feet apart, but should be enriched, before the seed is planted, in a similar manner. The after culture is the same as that recommended for pumpkins.

FIELD PEAS AND BEANS.

Drill in or broadcast these early in the month,—the earlier the better.

ORCHARDS.

If the bark of the fruit trees is mossy or rough, it may yet be scraped off with advantage to the health of the trees. They should also be treated with the wash as advised last month.

CUTTING CLOVER.

The proper time for cutting clover is when about half the blossoms have begun to turn brown.

FALL POTATOES.

Get these in by the 20th of the month at the latest.

Poison of almost any kind swallowed will be instantly thrown from the stomach by drinking half a glass of water, (warm is best) in which has been stirred a teaspoonful of ground mustard; as soon as vomiting ceases, drink a cup of strong coffee, into which has been stirred the white of an egg; this nullifies any remnant which the mustard might have left.

Garden Work for May.

From the commencement to the close of the present month the garden requires special attention, and will well repay it. Every available opportunity should be seized to keep all the plants now set out, or to be seeded, in the best possible condition for vigorous growth. The soil should be kept light and loose and perfectly free of weeds, and in dry weather water should be liberally employed, after sunset, or the plants will suffer. It is better to keep the water used for this purpose in an open tank or hog-head or oil cask, so that its temperature shall be not much below that of the soil to which it is applied. The work to be done is as follows:—

Planting out Cabbage Plants.—Select, if possible, a good clay mould—manure it liberally with the very richest and best rotted barn-yard manure; dig the manure in to the full depth of the spade and reduce the soil to the finest possible condition of tilth. Now prick out carefully the plants from their seed beds, dipping the roots, as they are withdrawn, in a mixture of soot and cow manure, diluted with water to the consistence of thick cream. Let the rows where the plants are to stand permanently be three feet apart, and dibble in the plants at distances of from eighteen inches to two feet apart in the rows. See that the earth is pressed firmly to the roots and choose a moist, drizzly day for the work. If this cannot be done, set out the plants late in the evening and shade them temporarily until the roots take a start.

Sowing Cabbage Seed.—Sow seeds of the early and late varieties of cabbage for fall and winter use, from the middle to the close of the month.

Siberian Kale.—Prepare a bed of about twenty feet square, and after manuring it heavily, and thoroughly spading the ground, rake all fine, and sow two ounces of kale seed, mixed with four times its bulk of ashes or sand. Rake the seed in and finish by compressing the earth of the bed with the back of a shovel.

Watermelons, Canteleupes and Muskmelons.—Prepare beds by manuring, digging, and raking finely. Make the hills for watermelons six feet apart, depositing a couple of shovels-full of the richest manure in each hill. For the canteleupes and muskmelons the hills should be four feet apart; but care should be taken that these various members of the melon family shall be planted sufficiently remote from each other to prevent their intermingling. After the vines appear above the surface, dust them early of a morning with a mixture of ashes and soot, or soot and sulphur, and take especial care to prevent the ravages of the striped bug.

Cymlins or Squashes, and Cucumbers.—Plant cymlins and cucumbers in hills four feet apart and treat them as melons are treated.

Roasting Ear Corn.—Plant some of the early varieties of corn for roasting ears. Continue to plant every ten days for succession.

Cauliflower, Brocoli.—Sow seeds of these.

Peas and Beans.—Put in a few more rows of early peas and bunch beans, and continue to plant every ten days for succession.

Lettuce.—Set out lettuce plants from the seed bed or frame, and sow seed for an additional supply.

Small Salading.—Sow seeds of small salading of all kinds at intervals of ten days for succession.

Radishes.—Sow seeds of the summer radish every week during the month.

Egg Plants.—Egg plants, after being raised in the hot bed, should be set out as soon as the ground has become completely warmed, and not before. The hills should be four feet apart and the soil light and deeply spaded.

Red Peppers.—Sow seeds of these for the main crop.

Endive.—Sow endive seed at once and about the middle of the month sow again for succession.

Pot and Medicinal Herbs.—Roots of these may still be set out, and where roots are not to be had, seed of the several sorts may be sown.



DEVON COW MYRTLE. [H. B. 909.]

Bred by James Quartly. Calved January 1852. Imported August, 1854, by J. A. Taintor, for J. Howard McHenry.

Parsnips, Carrots and Beets.—If these are not already seeded, get them in the ground at once.

Spinach.—Manure very liberally a bed for spinach and drill in the seed in rows one foot apart, and one inch deep.

Celery.—Sow celery seed for a late crop.

Asparagus Beds.—See that these are kept clear of weeds.

Onions.—Stir the ground about the onion sets, but take care not to cover the bulbs.

Tomatoes.—Set out plants from the hot bed in hills four feet apart; first placing manure in the hills as recommended for melons. Sow additional seed for a late crop.

Salsify or Vegetable.—Salsify seeds may yet be sown. Make the ground rich and drill in a liberal quantity of seed in rows one foot apart.

A SECRET FOR FARMERS.—It is worth knowing that every keeper of cows may cause them to calve during the day-time, instead of night or day, as it may happen, causing much watching and want of sleep. The simple method is this: When the cow is in calf, and the milk beginning to fail, till she is about "yelled," let no milk be taken from her during the day, or at night, but milk her any time in the morning, and let none be taken *but in the morning*; and when her time to calve has come, she will drop her young in the day-time. Two of our friends have tried this simple method, and have found it correct in every case. One who has eighteen cows has tried it these two years, and now they never think of sitting up at night — *Five Jour.*

Speak but little, and to the purpose, and you will pass for somebody.

ARTIFICIAL MANURES.

The following address was delivered by Dr. Anderson, before the Highland and Agricultural Society of Kelso, Scotland :

Few things are more astonishing than the rapid rise of the consumption of these manures ; and when we hear of millions being annually expended in their purchase, we can scarcely realize the fact that it is little more than twenty years since their use commenced, and that even a dozen years ago it was confined to the most active and energetic farmers ; while now, I suppose, it may be safely asserted, that there scarce exists a man who does not use them or would be inclined to deny their utility. The best proof of their value is, in fact to be found in the rapidity with which they have become an essential and indispensable part of agricultural practice ; and the farmer may point to what has occurred with regard to them as a triumphant refutation of his alleged indisposition to go with the times and adopt what is new. I propose to confine myself to considering in a practical point of view the nature of these substances, the sources from which we obtain them, and the mode in which they are manufactured. In discussing these matters, however, we cannot altogether avoid reference to principles, and we must at least lay down some fundamental positions which may afford data for the discussion of certain matters it will be necessary afterwards to consider. I would, in the first place, point out that the action of a manure is of a two-fold character. It supplies food to the plants growing in the soil to which it is applied, and it acts upon the soil itself, and promotes those chemical changes which are constantly going on within it, and which in particular cases proceed with extreme slowness.

The first of these is well known and universally recognised as the most important function of a manure, while the other is far too little regarded, and has scarcely received that amount of attention it merits. To supply food to the plants is unquestionably the primary and fundamental duty of a manure, and no substance deserves that name which does not fulfil it more or less completely, while it is not absolutely necessary that it should act on the soil ; and many substances are in daily use as manures, which have little efficacy in this respect, although there are probably none which are altogether devoid of it. It is unquestionably possible that a substance might be used as a manure—and even with advantage—which has no action on the soil ; while a substance which exerts an influence on it without supplying in itself some part of the food of plants, would scarcely deserve to be called by that name. A perfect manure acts in both ways ; and these properties are possessed in the highest degree by substances rich in organic matters, which being

in their nature prone to change, readily undergo decay in the soil, and yield carbonic acid—a substance which, though it acts slowly and imperceptibly ; is nevertheless one of the most powerful agents in affecting many of the greatest and most important changes occurring at the surface of our globe.

If we are to accept as the definition of a manure a substance which supplies food to the plant, and acts upon the soil so as to set free the supplies of nutriment existing in it, but which, without its use, would be unavailable, then it may be said that farm-yard dung is the only perfect manure. It is the only substance which, if added to a soil entirely devoid of all the elements of fertility, would enable it to maintain a crop, and under such circumstances it would obviously be valuable merely as a source of plant food, while its decomposing action on a soil containing none of the elements of fertility would be useless. The case now supposed is one that could never occur in practice, inasmuch as no soils exist which do not contain at least some of the elements required by the plant, and hence the decomposing action is always important. But there is a still more important inference to be drawn from this fact ; for if the soil contains within it a sufficient quantity of some substance necessary to the plant, it is immaterial whether it be present in the manure or not. And so, likewise, if the soil be rich in all the elements of plant food except one, a manure which supplies that substance, and that alone, would act just as well as if it contained every individual element required by the plant. Now, the condition to which reference has just been made, does, to a certain extent, occur in practice. Plants do not remove from the soil equal quantities of all their elements, some being carried off in much larger proportion than others ; and hence it happens that when land is cropped for a long succession of years, the supply of particular elements is reduced below the requirements of the crop, although others may still abound in the soil. Under such circumstances it is obvious that a manure containing only, or chiefly, those substances which have been removed in excessive quantity would effectually restore the fertility of a soil. In fact, if it were possible to ascertain exactly what the plant removes, we might attain this object by adding them in precisely the requisite quantities. That would be the perfection of agriculture ; but I suppose we are none of us so foolish as to suppose that it is possible to attain perfection, or to imitate exactly the great laws of nature by which our earth is governed ; but we can, at least, keep these matters before us as guides and directions. Inquiring, then, as to those substances which are removed from the soil, it is important to notice that only a part of the crop is in this predicament. Root crops and straw are not lost, but re-

stored to the land in the form of dung: and it is really only the grain of cereals which is conveyed off the farm and consumed elsewhere. Now, it so happens that the seed of all plants contains a large quantity of phosphoric acid and nitrogen. During the early part of their growth these substances circulate uniformly through all parts of the plant, but when the period of maturity arrives they are carried to the seed and accumulate there, while the quantity in all other organs of the plant undergoes a corresponding decrease. The difference is well illustrated by linseed and flax straw, the latter containing little more than one-tenth per cent. of nitrogen, the former 3.5 per cent. or more than 30 times as much. The same is observed, though to a less striking extent, in the grain of the cereals, which in round numbers may be said to contain nearly ten times as much nitrogen as the straw. These considerations show distinctly that when the part of the crop which is rich in nitrogen is carried off, and that which is poor in it returned to the soil, there must be a gradual diminution in the quantity of that substance available to the plant unless the manure containing the small proportion be used in excessive quantities, and in that case the other elements of plant food which it might contain in full quantity are needlessly accumulated in the soil. What has been said regarding nitrogen applies equally to phosphoric acid, and in minor extent to potash. When dung was the only manure employed, the crop produced was limited by the quantity of these substances it contained; or if it were used in sufficient abundance to supply them all, the other elements which accumulated in the soil, where either lost, or at all events, could only be looked upon as a reserve which might become available under favorable circumstances. It is in this state of matters that artificial manures become useful, and their great value lies in their supplementing farm-yard manure, and increasing the supply of those substances which are relatively deficient in it. An artificial manure cannot take the place of farm-yard manure; it is only capable of supplying its deficiencies. It cannot of itself support the life of plants, except in those rare cases in which it happens to contain all their constituents; and when it is employed alone it operates by throwing the plants upon the natural resources of the soil for a supply of those substances in which it is deficient. By the term artificial manure, it will be observed we do not understand a substance manufactured by any particular process, but take it in its wider acceptance as meaning what is perhaps more correctly designated by the name of special manure; and the most conspicuous difference between them and farm-yard manure lies in this, that the latter contains all, the former, in general, only some of the elements of plants. Some guano, no doubt,

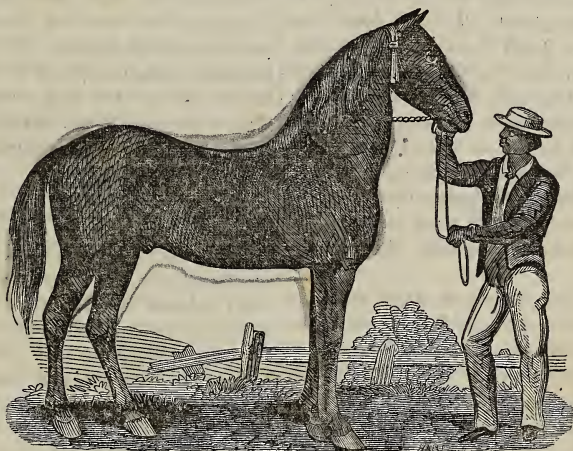
contains a small quantity of all the necessary constituents, and in a few manufactured manures an attempt has been made to supply them, but this object has generally been very imperfectly fulfilled; and in all but exceptional cases, artificial manures may be considered as sources of nitrogen and phosphoric acid, the former existing in them as ammonia or nitric acid—chiefly in the first of these forms—and the latter as phosphate of lime, occasionally associated with a small quantity of phosphate of magnesia. Every substance which has acquired a reputation as an artificial manure contains one or other of these elements, often both, and no substance which derives its commercial value from potash, soda, or magnesia, has come into general use; and though cases occur in which they have been employed, and sometimes with great advantage, they are so rare as to be quite exceptional. The fact is, that farm-yard manure, and most soils capable of producing a crop, contain these substances in sufficient abundance to make their supply from other sources a matter of minor importance; and though no wise farmer will overlook them, but will gladly add them to his soil when he has an opportunity, he will prefer nitrogen and phosphoric acid to them. In making this statement, I am expressing no theoretical opinion; I am stating a fact derived from the experience of practical farmers, who invariably select as artificial manures substances containing nitrogen and phosphoric acid.

When used as manures, they are obtained either mixed or separate. When mixed, they are of peculiar importance to the farmer, not merely because he gets both together, but much more because when in that state they are, if I may so express it, condensed to be used as manures. Separate, they may be turned to other uses, but mixed, they are entirely at the disposal of the farmer, and there is little to interfere with their price, which will always be regulated by what we can afford to pay for them. The substances which yield these elements mixed are almost exclusively of animal origin, and embrace the various kinds of guano and bones. It is unnecessary to enter upon the composition of these substances farther than to remark that we know guano of various kinds passing from Peruvian, in which ammonia preponderates, to Bolivian in which phosphates abound. Different as these are in composition, they were originally identical, both being the dung of carnivorous birds, and their present difference depends, as is well-known, on the circumstances attending their deposition, a dry and rainless climate preserving them in their original condition, or in a slightly altered state, while in a moist locality the decomposition of their organic matter causes the disappearance of a large portion of ammonia. These manures, however, are important

not merely on account of the large proportion of the elements in question which they contain, but because of their organic matter, which is of a peculiarly decomposable kind, and hence they fulfil to a certain extent the office of acting on the soil and liberating its useful constituents, which is one of the great characteristics of farm-yard manure. It is satisfactory to find from the statements recently published that the supply of Peruvian and analogous guano is much larger than we were led to suppose, and that there is at least for a very considerable time no prospect of their being exhausted. As regards the supply of phosphated guano, there is little available information. The best is Bolivian guano, which is imported in large quantities, though little of it comes to Scotland. There is a very valuable kind, containing about 60 per cent. of phosphates and 1 or 2 of ammonias which merits more attention from far-

during the manufacture of gas; and a portion of that manufactured is carried off by other trades—such as the manufacture of alum, &c.—in which it has come to be largely used in place of potash, which has greatly increased in price. There is, however, some prospect of advantage in this respect, as a new source of potash has been recently discovered. At the present moment, the product of the salt called muriate of potash in this country amounts to 7000 or 8000 tons, while a work has been established in Germany which proposes to make 10,000 tons annually. This great increase in the supply must affect the price of ammonia, and it may prove useful to the farmer in giving him a supply of potash which, at no distant date, it will probably be necessary for him to apply to the soil. Dr. Anderson then proceeded to refer to the nature and manufacture of superphosphates, pointing out the difference between

MORGAN BLACK HAWK--Property of Charles Carroll, of Howard County, Md.



Engraved by Hart from a Photograph by Pollock.

mers than it has received. The great objection to these guanoes is their want of uniformity, and this tells still more with the inferior kinds, such as Bird Island, Kooria Moor, &c. The sources and supply of these inferior guanoes are of less importance, for their import has greatly diminished, and will probably become still less as farmers become aware of their quality. As it is, I believe it consists with the experience of all merchants, that guanoes of this description have of late years entailed a loss of not less than 17. a ton on the importer. A certain number of cargoes of the kind are annually imported, which are got rid of in those districts, and where the relative value of different artificial manures is not understood. Sulphate of ammonia, which is an important source of nitrogen, has this disadvantage, that the supply cannot be increased in proportion to the demand, because it can only be produced

those made from bone, which, like farm-yard manure and guanoes, contains decomposable organic matter, and hence exert a chemical action on the soil, and those which are made from mineral phosphates—such as coprolites. While recognising the fact that the latter are so far inferior, he pointed out that, considered merely as a source of soluble phosphates, there is no difference between a manure made from coprolites and bones; but it ought to be understood that there is a very great difference between the prices of the raw materials in the two cases, and the farmer has a right to complain if the manufacturer sells a manure as being made from bones, but in reality contains coprolites.

In England there are 62 individuals to every hundred acres; in Ireland but 34. In British North America there is but one person to the square mile.

THE PROPER DEPTH FOR PLANTING CORN.

Correspondent A. of Concord, Delaware County, writing for the Germantown Telegraph, on this subject, says:—

Having, during last spring, instituted a series of experiments to settle in my own mind the above point, I thought the result might be interesting to your practical readers, and I herewith send it, hoping you will use it as you see proper, and oblige one who highly values the fourth page of the *Telegraph*.

The experiment was tried thus. Having near the house a small lot which I desired to plant with corn, I ploughed and harrowed it in the usual manner, and marked it out one way with a chain. The corn was planted carefully with a dibble (a pointed stick) in the following order: Rows Nos. 1 and 2, planted one inch deep, came through in $8\frac{3}{4}$ days; No. 3 and 4, put in one and a half inches deep, up in $9\frac{1}{4}$ days; rows 5 and 6, put in 2 inches deep, came up in 10 days; rows 7 and 8, planted $2\frac{1}{2}$ inches deep, came up in $11\frac{1}{4}$ days; Nos. 9 and 10, put in 3 inches deep, came up in 12 days; Nos. 11 and 12, put in $3\frac{1}{2}$ inches deep, was up in $13\frac{1}{2}$ days; Nos. 13 and 14, planted 4 inches deep, came up in 14 days; Nos. 15 and 16, put in $4\frac{1}{2}$ inches deep, came up in 15 days; Nos. 17 and 18, put in 5 inches deep, came up in 18 days; and 19 and 20, planted $5\frac{1}{2}$ inches deep, only 10 grains came up, and were 21 days in so doing; Nos. 21 and 22, put in 6 inches deep, did not come up at all.

Those grains of Nos. 19 and 20 which did come up all died within five days; of Nos. 17 and 18 but forty-two grains reached the height of six inches, and none at all got above eight inches high. Nos. 15 and 16 all lived, but produced no ears of a full size. Nos. 3 and 4 produced by far the best corn; Nos. 1, 2, 5 and 6 produced sound ears, but inferior to 3 and 4.

With regard to Nos. 7 and 8, and all which followed them, I noticed several peculiarities, which may account for corresponding peculiarities of growth in our cornfields. They all grew as usual until the distance between the seed and top of the stalk amounted to about six inches, when from some cause they ceased to increase in height and remained stationary. After repeated careful examinations to ascertain the cause of this curious stoppage of growth, I found that the first joint in the embryo cornstalk was, when the corn was six inches high, invariably about two inches from the seed grain. As soon as this joint became perfectly formed the plant ceased growing above ground, the joint sent out a number of new roots, and the old or lower ones decayed.

I found by repeated notice that this change of roots required from ten days to two weeks for completion when the corn was planted but from $2\frac{3}{4}$ to $3\frac{1}{4}$

inches deep, but if planted deeper it required a longer time, which was nearly in proportion to its depth. By burying the first joint up just as fast as it reached the surface, I found that it would keep the plant making roots for half its natural life.

Some consider that the corn should be only just covered with dirt; this, no doubt will cause it to come through the ground sooner, but it will not grow as well as that planted deeper, which has from this fact more root.

There is another advantage to be derived from deep planting; if we examine a young corn plant when about two inches high, or even smaller, we will find in the centre of the stalk, near the root, the heart or germ of the plant. Now, the cutworm cuts the stalk at the surface of the ground, and if the point of this heart or germ is below the surface, it may cut the plant and do it no injury except to retard it; but if it cuts only a little from the germ it will destroy the plant effectually.

It would then seem that the proper depth to plant was deep enough to keep this germ below the surface long enough to be out of the way of the cutworm, and yet not deep enough to bury the first joint below the surface; this depth I have found by trial, (wherein I acted as cut-worm,) to be from $1\frac{1}{2}$ to 2 inches.

How to get a Great Crop of Potatoes.

When any of my neighbors raise better crops or get them with less labor than I can, I am apt to want to know how they do it. On the other hand, if they have extravagant theories, do a great deal of extra work on their land, fuss a great deal with composting manures, and thoroughly pulverizing the land, and still do not show any better crops than their neighbors, I am not particularly inquisitive to know or practice their theories.

Happening, a few days ago, to be in the cellar of Capt. S. Hayden, of Hollis, I noticed his bins of splendid potatoes, and had the curiosity to enquire how he raised them. He told me that on ground plowed in the spring he furrowed as deep as he could without turning up the turf. He prepared his manure by putting in the green manure some loam, ashes and brine or salt not very strong. He cut his potatoes so that one as large as a hen's egg would be divided into three or four pieces, and put three pieces in a hill, the skin side up, in a triangle of about five or six inches apart. He then put a shovel full of manure on the top of the potatoes.—The result was that his potatoes yielded at the rate of from eight to ten hills to the bushel of good market potatoes. He told me he took good sized potatoes to plant. The potatoes he raised were large enough—would average as large as turkey's eggs.—*New England Farmer.*

CLOVER HAY.

The following was written by R. McClure, veterinary surgeon, for the *Culturist*, Philadelphia. He says a disease is now prevailing among horses in Philadelphia, and that they will not eat timothy hay, but would eat clover hay, if they could get it, but that it can scarcely be found in the city. He says:

"Why is this the case? Simply because there is prejudice existing among all classes of horsemen, and from them communicated to the owners of horses, against feeding this kind of hay. First, because it is said that clover hay produces heaves, and secondly, because it is said that it is not respectable to be seen feeding with clover hay, it looks parsimonious. These opinions concerning this article, are so widely and firmly fixed in the mind of almost every groom and stableman, as well as horse owners in Philadelphia, that I believe it has been the cause why most farmers are not giving clover cultivation to the extent that it ought to be, or as its superiority as an article of provender demands. Let us now examine in brief, the objections that are laid against it. It is said it will produce heaves in horses. The idea is as false as it is preposterous. If broken wind is produced by an article of food, it certainly is not from food but from the quantity given. In like manner heaves may be caused by a too great quantity of water, oats, corn, or any kind of hay whatever, given at an improper time, as when the animal has a journey to perform. In a word, it is the person's fault in giving too much food at an improper time, and not the character of the food that thus produces heaves in the horse. The man, who, when feeding a horse, would fill its manger with oats and corn, would not be considered a very fit man to feed and care for horses, neither is that man who would fill a rack full of clover hay; as the animal will not stop eating until it has hurt itself, or has eaten every blade of clover before it; as every horse is fond of it, and as before stated, sick horses will eat it when they will not eat anything else. Without another word our argument is complete.

For argument's sake, let us see what there is in the other objection to clover hay. It savors of meanness. Does this opinion arise from the idea that the queenly cow eats and feeds upon it in all our large cities? How much inferior is she to the horse, and which adds most to our domestic happiness as well as health? Is it mean to purchase for horse feed, hay which is superior to any other, and sold forty cents to half a dollar a ton less than the best kinds reported in the market? Or is it a mark of generosity in the deportment or character of any man, to feed his horses upon that which the animals do not seem to relish, trample a large portion of it under

their feet, to be carried thence to the dung hill, when another article superior to it, in point of nutriment, and costing from forty to fifty per cent. less may be obtained?

The whole may be summed up in a few words, as follows:

Good clover hay contains forty-five per cent. more fattening matter than timothy hay, and about forty per cent. more than the English rye-grass-hay; about ten per cent. less than dried lupins or vetches, which are extensively used in Europe for the feeding of both horses and cattle, and which are second only to the *Trifolium hybridum* or *Alsike* clover, so named from a district in Sweden called Alsike. Alsike clover contains the properties of both the red and white clover, and was first introduced into Great Britain about 1834 or 5. This variety of clover has for the last few years engaged the attention of agriculturists in Scotland and various parts of England to a great extent. Its reputation is now so firmly established that more of it has been sown the last year than ever before. It is said by many agriculturists that animals will leave any other grass or clover to feed on the Alsike, and they say further that the more it becomes known the greater will be its cultivation.

 THISTLE LAWS.

In Pennsylvania and Michigan there is a law in regard to the destruction of the Canada thistle, which we have often thought would not be a bad thing for some sections of our own State. In those States the owners of land on which this pest is growing are obliged to cut them before the seed ripens, or incur a penalty of \$15; and further if the owner or occupier of such land refuses or neglects to destroy such thistles, after receiving five days' notice, any person who is injured or aggrieved thereby may cut or destroy them and receive compensation for his labor from the owner of the land. Who but has noticed, while riding through the country, beds or pats of thistles, here and there, fully ripe, and sending forth their airy winged seed messengers upon every breeze, to contaminate some neighboring field. Really we believe that just a little taste of such a law as the above might be a benefit to us.

Maine Farmer.

LIVE AND DEAD WEIGHT OF SHEEP.—The English rule is to weigh sheep when fasted, and divide the weight by 7 and call it quarters. Thus, a sheep weighing 140 pounds, would give 20 pounds a quarter as dead weight. If the sheep are in good condition this rule is sufficiently accurate for all purposes. Poor sheep will fall below the mark, and extra fat ones go over it.

ONIONS.

Mr. Meeker, of Westport, a famous cultivator of the Onion crop, thus describes his mode of raising them :

"Our mode of preparing the ground is, as early as practicable in the spring, to cart on about twenty tons of manure to the acre, having previously had it thrown into a heap, that it may be well heated, and thus kill all noxious weeds. After spreading it we plow it in, turning it in so deep that the harrow will not draw it to the surface. If it will not turn under readily, a man, following the plow, pushes it into the furrow. We next cover it thoroughly with a wooden-toothed harrow, then use the brush, leaving the ground in good order for raking, which is done with a common wooden hay-rake.—We then sow from $3\frac{1}{2}$ to 4 pounds of seed to the acre. When the onions are up, we commence hoeing, and the weeding follows, which is continued at regular intervals, as long as required. In September, the tops become dry and fall, when the onions should be pulled and spread on the ground, separating the green ones from the dry. The latter should be raked into heaps, after a few days; for if allowed to remain too long exposed to the sun, they will assume a dull-red color, and be liable to injury.—When well cured, remove them to a building for the winter, where they should be spread upon a platform, about a foot from the floor, giving them air, when the weather will permit. In topping them, cut about an inch from their bulbs. Hog manure and wood-ashes are the best fertilizers for this crop.—*Canada Farmer.*

HOME-MADE POUDETTE.—As the season for the purchase and use of manures is close at hand, any suggestions which may lead to any increase of the home supply, will not be without value. To those who may wish a supply of poudrette without the high market cost, the following directions will be valuable. Procure any large box or cask, such as a sugar box or molasses hogshead, fill it about three fourths full of finely pulverized muck, place in convenient position, and make it the receptacle of the soap suds and all the waste material from the family. A short time before using take out and thoroughly mix together. Any farmer or gardener can in this way furnish himself with a good supply of a fertilizer at a trifling cost, and which is really more valuable than the poudrette which is purchased in cities at a great cost.—*Plowman.*

SURE WAY TO KILL CANADA THISTLES.—Commence plowing them as soon as they begin to show themselves in the spring, and continue it through the season as often as they make their appearance, and you may rejoice in the victory you have gained over this prickly pest.

BONE DUST.

Mr. CUMMINGS, the Agricultural Editor of the New York *Observer*, says: "When entering upon the cultivation of our present farm, we asked our predecessor what field would give a crop of potatoes without the application of fresh barnyard manure, as we feared the application of such in inducing 'the rot'. A five-acre field was named. We carefully planted and cultivated it, and found no rot among the potatoes, but the yield of the whole field did not supply the tables of the farm for the year, so exhausted was the land. In the autumn we ploughed and sowed the same field with rye, applying twenty-five bushels of bone dust to the acre. Such was immediate effect of the application, that when the rye was grown, a man of ordinary stature would be concealed by the crop in walking through the field. Grass seed was sown with the rye. A good crop of hay was taken the first year it was mowed. But the second year, when turf was well established, sixteen tons of hay were taken from the five acres. After mowing it four years, it was plowed and planted to corn, giving a heavy crop without manure. Bone dust by the quantity costs as to quality from 50 to 70 cents the bushel. Twenty to twenty-five bushels of bone is a good dressing to the acre, and is worth from two to three times the same cost of stable manure brought from the city. Bone dust should be applied to and left as near the surface as may be, and be suitably covered. We usually sow broadcast after the first harrowing. The second course of the harrow will cover near the surface.

CHEAPEST MODE OF FEEDING HORSES.—J. Fisk, of Baldwinsville, N. Y., writes us that he has a horse, five years old, used as a family carriage horse, and is frequently let to his neighbors. His labor is considerable. In the morning he feeds a bushel basket of cut oat straw; moistens it with water; throws in four quarts of shorts, mixes thoroughly and feeds. At noon gives straw again, and two or four quarts of shorts clear. At night mixes hay and straw—equal parts of each—cuts a basketful and mixes shorts again as in the morning. Feeds also all the potato and apple parings, cabbage leaves, &c., to him. His horse is free from cough, lively, healthy and fat: and this practice he is confident saves him 50 per cent. the cost of keeping a horse the usual way—costs about three minutes' time per day. This is an important item in the days of high feed.—*Rural New Yorker.*

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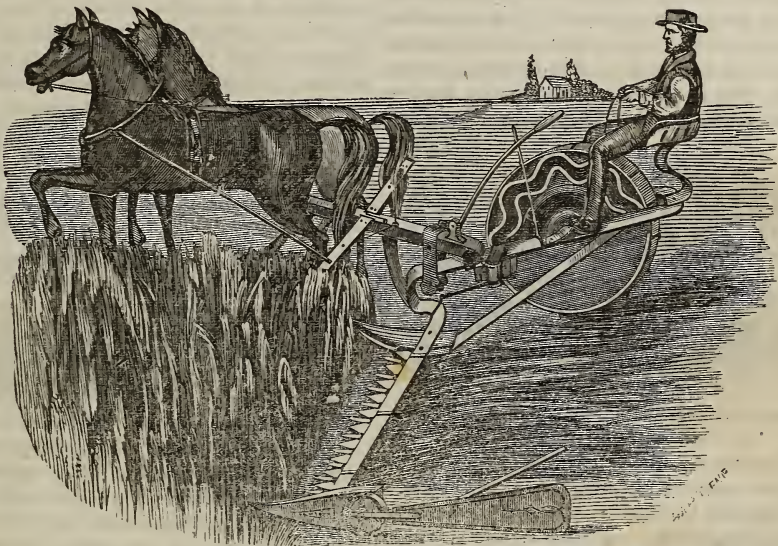
FARM IMPLEMENTS & MACHINERY.

NO. FOUR.

REAPING AND MOWING MACHINES.

No improvement in modern husbandry has been more marked and rapid than that effected by the invention and introduction of mowers and reapers.— They have placed the farmer above the contingency of finding many extra hands for securing his crops at a critical juncture, and on this account can extend his breadth of sowing with the confidence of being able to secure what he raises. To be thrown back on the sickle and hand-cradle would as much derange the business of farming, as that of the trav-

lished in character by two or three seasons' use.— The amount of work which a good machine will perform is easily and accurately estimated. If the strip of grass or grain cut at each passing is four feet and two inches, (or one-fourth of a rod,) a pace of two miles an hour as an average, including stoppings, would accomplish an acre per hour, or eight acres in a working day of eight hours. This has frequently been greatly exceeded by the use of an efficient team. At this time in the season farm horses usually have but little to do, and in making a fair estimate of their labor it may be, therefore, placed rather low. In estimating a mowing-machine, which needs only a driver, it would be sufficiently liberal to call the work of a man and team



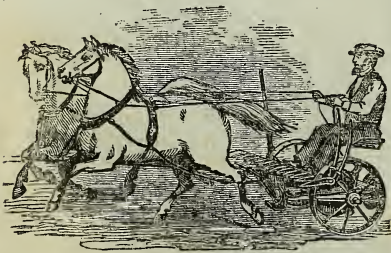
RAY'S IMPROVED MOWER.

elling public to be deprived of railways, and to be driven back to stage-coaches. The past ten years have witnessed great improvements in these machines themselves. They are made stronger, lighter, more durable, more efficient, and of easier draft; and what is not least in importance, the best ones cut as perfectly when moving at the rate of one mile per hour as three or four miles, which was formerly necessary. Teams had then to be driven with severity, and soon became exhausted; now even the slow pace of oxen does good work. There is now a large number of patents, and many good machines are made of different forms. It is as important that the machines be well manufactured as well invented. To be both light and effective, the very best materials must be used and every part made in the best working order, and it is safest for farmers to purchase of those whose machines have become estab-

two dollars a day. Estimating the average day's work at eight acres a day, and the product of the meadow at two tons, the cost of cutting would be twelve and a half cents per ton, besides the use of the machine.

It has been found that the best mowers, as made some years ago, would cut about one thousand acres before wearing out, and need but little repairs during that time, or at a rate of about twelve cents per acre, all things estimated. The better machines now manufactured would probably do much more, on account of their easier and smoother running, occasioning less rattle and wear. It would, perhaps, be safe to say ten cents per ton, under good management, as the cost of the machines in actual use. This added to the preceding estimate on the man and team, would make seventeen and a half cents per ton, as cost of cutting. As no spreading

is needed, the next operation is the raking. With the best revolver or spring-tooth rake, a width of ten feet may be taken at a time, say eight and a fourth to be within bounds, or one-half a rod. A horse travelling two miles an hour, including all stoppages, (all good horses would much exceed this) would rake two acres an hour, and sixteen in a day of eight hours, at a cost of a dollar and a half, or at less than nine and a half cents an acre, or about four cents a ton. This added to the seventeen and a half cents for cutting, would give the hay in the winrow at less than twenty-two cents per ton. The figures here given may be altered to suit the different circumstances of various localities, difference in wages, &c. There are also several drawbacks which farmers who are not energetic and efficient managers may materially experience. A poor machine may be procured or a good one allowed to get out of order. A poor team or a bad driver may be employed. The meadows may be rougher than the best farmers would ever tolerate, or covered with



Buckeye, Jr. on the road, showing the operation of the double-hinged folding bar.

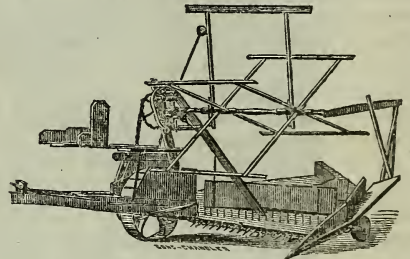
stones, or not rolled each spring, as every meadow should be, until its smoothness is unquestioned.—The grass may be light or only one ton per acre, thus doubling all the estimates by this deficiency alone. With those who cut but few acres per year, the interest on the idle machine would still further reduce the profits.

With all these adverse circumstances, it is not unusual to find an actual cost three or four times as great as the standard here given; and for this reason some intelligent men have been led to pronounce as gross exaggeration all statements not within their own experience or observation. The accidents and disasters of weather scarcely affect the preceding result as applied to the hay in the winrow, although heavy rains before raking might injure the quality. The cost of drawing in is not given, as it varies with local circumstances, distance to draw, mode of securing, whether by hand or horse fork, &c. For the sake of contrast, I give an estimate of making hay till it reaches the winrow, as practiced under the old mode of cutting with the scythe, tedding from the swarth, and raking by hand:

To mow one acre by hand, (double this cost if lodged,) one acre of two tons, average	\$1 00
To spreading by hand.....	15
To raking by hand.....	50
	\$1 65

or at least eighty-two cents per ton to the winrow, instead of twenty-two, as with the best machine management.

But there is one prominent item of disparity not yet attended to. The rapidity with which the grass may be cut and secured enables the farmer to select good weather for the work, and to wait till a lowering sky disappears. He rarely, therefore, meets with those adverse occurrences, rain-showers, that so much increase the labor and diminish the value of the crops. But when hand labor was exclusively employed, it was often necessary to keep mowing on without delay for several weeks, or the large meadows could not be cleared, and there were, consequently, all the chances for meeting with showers. On some large farms, a mowing machine has paid for itself in a single year, by avoiding such disasters.



M'CORMICK'S REAPER, with Self-Raker attached.

Reaping machines, requiring usually an additional hand for raking and several men to bind, are not as great savers of labor; but they become indirectly the means of preventing much loss, whenever there is danger of such loss by a delay in harvesting beyond the best time, or by continued storms. Many efforts have been made to contrive a successful binding machine. When this is accomplished, their efficiency will be much increased.

We illustrate this article with three engravings, which we have at our command—Ray's Mower—McCormick's Reaper and Mower; with Self-Raker—and the Buckeye, Jr., on the road, showing the operation of the double-hinged folding bar.

There are a variety of Reapers and Mowers manufactured and sold in our State—which are now offered for the harvest of 1864—and been tested in the field. We believe them all to be good, but as most farmers have their preference, we subjoin a partial list of those in our market, so as to enable our friends to select those they may judge the best.

Ray's Improved Junior Combined Reaper and Mower, manufactured by F. Ray, 205 Pratt street.

Wood's Prize Mower—Wood's Self-Raking Reap-

er—Wood's Combined Reaper and Mower—Dorsey's Self-raking Reaper—all sold by Thomas Norris, 141 Pratt street.

McCormick's Reaper and Mower, sold by Spear Brothers, 41 S. Charles Street.

Buckeye Mower and Reaper, manufactured by Bruster, Griffith & Benson, 49 N. Paca street.

Howard's Reaper and Mower Combined, manufactured by E. Whitman & Sons, 24 S. Calvert st.

Farm Implements and Machinery for 150 Acres.

The following is a list of the principal Implements and Machines needed to furnish a hundred and fifty acre farm devoted to mixed husbandry, and their approximate cost :

3 Ploughs fitted for work.....	\$34 00
1 subsoil plough; 1 double plough.....	24 00
1 one-horse plough; 2 cultivators.....	22 00
1 harrow, \$12; 1 roller, \$75.....	87 00
1 corn planter; 1 seed drill.....	30 00
1 wheat drill, \$65; 1 fanning mill, \$25....	90 00
1 root slicer; 1 straw cutter.....	20 00
1 horse rake; 2 hand rakes.....	15 00
2 farm wagons; 1 one-horse cart.....	190 00
1 combined reaper and mower.....	175 00
2 scythes; 1 grain cradle.....	7 00
1 shovel; 1 scoup shovel; 2 spades.....	5 00
2 manure forks; 4 hay forks.....	6 00
1 horse fork for hay; 1 pointed shovel.....	16 00
1 pick; 1 crowbar.....	5 00
1 maul and wedges; 1 axe; 1 wood saw....	5 00
1 wheelbarrow; 1 grindstone.....	20 00
1 horse power, thresher and separator,	300 00
1 circular saw.....	40 00
Hand hoes, baskets, stable lantern, curry-comb, hammer, &c.....	6 00

\$1,091 00

As the farm wagons have to be drawn many thousand miles each year in the aggregate, they should be made light and strong, for a needless pound drawn ten thousand miles is one pound too much. The improved iron axles are best. The horse power may be used for threshing, cutting straw and stalks, sawing wood and splitting pickets, turning grindstone, driving churn, and other operations, if properly placed, with a supply of rods and bands.

No careful farmer will forget the importance of keeping all his wooden implements that are liable to exposure to the weather, well covered with paint; and those which may receive much of the sun's rays should be painted a light color, as white, yellow, or light brown. Dark colors absorb the heat of the sun, become much hotter than light colors, and cause twisting, warping, and cracking by exposure. And lastly, every provident husbandman who desires to have his tools always in good order and always at hand, where he can lay his hand on any one in a moment, without the annoyance and loss of long searches when work is pressing and men waiting, will have a neat tool-house, wherein to deposit and have arranged every tool needed for farm use.

USEFUL RECIPES.

A correspondent of the Michigan Farmer recommends the following remedy for the healing of wounds upon horses :

Salt-peter should be dissolved in warm water, in such proportions as to be moderately strong to the taste, and blue stone added until the solution is *slightly* tinged. This, and nothing else, is to be used as a wash, two or three times a day. It purifies the wound, destroys the proud flesh, produces granulations immediately, and heals the wounds in a surprisingly short time. I have had a horse badly kicked and otherwise hurt, in midwinter and midsummer, and their cure was equally rapid, and afterwards no scar was visible. The wound requires no covering (flies will not approach it,) and, dressing it with a mop of rags tied to a stick, is very little trouble. Wounds do not require to be sewed up under this treatment; at least I never saw any advantage from it, as the stitches have uniformly torn out.

GRUB IN THE HEAD OF SHEEP.—Dr. Dadd, in a communication to the *Prairie Farmer*, says the only way to prevent grub in the head of sheep, is to put plenty of "grub" into the stomach of the animal—and that it is a well known fact that sheep properly attended to, well fed, and housed, are never troubled with the parasite known as the grub.

FOOT ROT IN SHEEP.—A correspondent of the *Ohio Farmer* gives the following recipe for the cure of foot rot:—Pulverize blue vitriol and white lead together; mix it with spirits of turpentine to a salve, and apply this salve with a paddle to the sore part of the foot.

TO CLEAN WELLS.—A correspondent of the *Massachusetts Plowman* says he made his well pure by bailing out the water, and filling up the well with straw and burning it. After this he washed the stones and put in a little slaked lime. It was found very effectual.

SCRATCHES ON HORSES.—Wash with Castile soap-suds, and rub thoroughly dry. Then apply glycerine. A few applications will cure the most obstinate cases. We tried a number of approved remedies, but could not effect a cure till we used the glycerine. It worked like a charm.

REMEDY FOR BURNS AND SCALDS.—The best applications for burns and scalds, is a preparation of olive oil and pulverized lime, mixed to the consistency of a salve, spread smoothly upon a linen cloth and laid upon the burnt or scalded part. The relief to the sufferer in all cases, however severe, is almost instantaneously effectual.

Warts on Cattle, it is said, can be removed by spirits of turpentine and lard.

Hygiene.

To Stop Coughing.

Slight irritation of the throat may be relieved by sipping a little thick slippery elm tea, or by sucking a piece of gum-Arabic. These articles coat over the mucous membrane, and prevent the irritation of the air. A few drops of paregoric held in the mouth and allowed to trickle down the throat, will allay coughing. The best cough medicine for children, one which has been used for several years with entire satisfaction, is the following: Mix in a phial equal parts of paregoric, castor oil, and syrup of ipecac. Always shake well just before using. A few drops swallowed, but not washed down by water or other fluid, will always soothe a cough. Repeat the dose as often as the coughing returns. From one-fourth to one-half a teaspoonful may be given when a lesser quantity does not suffice. A large dose after a full meal may produce a little nausea.

Children should eat very light suppers, and indeed all children should eat much less and simpler food at night than in the morning or noon. The above mixture may be kept on hand readily prepared as it does not deteriorate if kept corked. It may interest those afraid of mineral medicines (though they partake freely of common salt, which is a mineral), to know that the above ingredients are all "vegetable."

Hygienic Importance of Light.

Dr. Moore, the metaphysician, thus speaks of the effects of light on the body and mind: "A tadpole confined in darkness would never become a frog; and an infant deprived of heaven's free light will only grow into a shapeless idiot, instead of a beautiful and responsible being. Hence, in the deep, dark gorges and ravines of Swiss Vallais, where the direct sunshine never reaches, the hideous prevalence of idiocy startles the traveler. It is a strange melancholy idiocy; many citizens are incapable of articulate speech; some are deaf, some are blind, some labor under all these privations, and all are mis-shapen in almost every part of the body. I believe there is in all places a marked difference in the healthiness of houses according to their aspect with regard to the sun, and those are decidedly the healthiest, other things being equal, in which all the rooms are, during some parts of the day fully exposed to the light. Epidemics attack inhabitants on the shady side of the street and exempt those on the other side, and even in endemics, such as ague, the morbid influence is often thus partial in its labors."

Eating when Sick.

It is the custom among a certain class of people, when a member of the family is sick, to begin at once to ask: "Now what do you want to eat?"—Every one has heard the old story of the man who ate eighteen dumplings when he was sick. On one occasion, when engaged upon the eighteenth, his little son said: "Pa, give me a piece?" "No, no, my son," replied the father, "go away, pa's sick." When a young man has been surfeited, in season and out of season, until exhausted nature gives way and a fever is coming on, the good mother is in trouble. She anxiously inquires:—"Now, John, what can you eat? You must eat something. People can't live without food." Then comes toast, tea, etc. The stomach is exhausted, and no more needs stimulating or food than the jaded horse needs the whip. What is needed is rest, complete rest.—Nine-tenths of the acute diseases might be prevented by a few day's starvation, when the first indications appear. I don't mean complete abstinence in every case, but perhaps a piece of cold bread, with cold water for drink. If such a policy was generally adopted, what ruin would overtake the medical profession.—*Dr. Dio Lewis.*

If you get your feet or body wet, keep moving with sufficient briskness to keep off a feeling of chilliness until you get to the house; undress instantly by a warm fire, drinking, as soon as possible, a cup or two of hot tea of any sort, and remain by the fire until thoroughly rested.

When from any cause the bowels fail to act at the usual time, do not eat an atom more until they do act, at least for thirty-six hours; the first meal after a fast should be very light, of bread and butter, and a cup of weak tea or coffee.

BILIOUSNESS is indicated by a bad taste in the mouth, of mornings, a poor appetite, and a feeling of general discomfort, often accompanied with a headache and cold feet. The best cure is to work moderately, take but two meals a day, and these of bread and butter, with a cup of tea or coffee.

ADMINISTRATION OF QUININE.—The bitter taste of quinine is easily concealed by putting the powder to be taken on a portion of the white of an egg covering it with another portion. In this manner children, or the most "spleeny adults" will swallow it readily. So says the Chicago Medical Journal.

REMEDY FOR COUGHS AND COLDS.—One tablespoonful of honey, half teaspoonful pulverized ginger, and as much black pepper boiled five minutes in a gill of apple vinegar. The quantity is sufficient for a common family.

FLOUR and meal of all kinds should be kept in a cool dry place.

The Dairy.

HOW TO MAKE GOOD BUTTER.

The following mode of making butter, we copy from the Philadelphia Rural Advertiser, and is from the pen of Mr. H. Eachus, for many years one of the very best dairymen in that section, and who knows what he talks about. He gives the mode of management throughout, which it will be observed, is different from the practice elsewhere:—

THE PROCESS.—After the milk is drawn from the cows it should be strained into pans properly arranged on a bench for the purpose, with a small quantity of fresh sour milk in each one, to hasten the raising of the cream, which should on all occasions be taken off from thirty to thirty-six hours after being milked, it being found that by standing longer in a large dairy, more is lost by deteriorating the quality of the butter than is gained in quantity. When the cream is skimmed off, the milk into a large cream pot, it should be put in the butter hole in the spring, and let stand one day, and then skimmed off, so as to remove any sour milk that may have settled from it to the bottom of the pot, and should be subsequently stirred every day until churned, to prevent rancidity from taking place on the top of the cream by too long standing, which is the main cause of all the strong butter that is made. The cream should be churned twice in the week during the summer months, and all the year where there is a sufficient quantity to warrant it. The temperature of the cream and churn should be about sixty-two degrees, so as to ensure the butter to come right, and in the proper length of time, which should be about thirty minutes. There is as much danger in having the butter come soft by over churning as by the atmosphere being too hot. In order to regulate the temperature of the cream in the fall, winter and spring, it should be set in a tub of hot water until it comes to the temperature above designated—the butter broken in the churn to the size of peas and chestnuts. The buttermilk should be drawn off through a fine hair sieve from the vent of the churn, which should be about an inch hole. A sufficient quantity of spring water should then be put in, and a few revolutions of the churn, when it should be drawn off, and then another quantity of spring water put in and tumbled in the churn until gathered into a mass. The water should all then be drawn off, and the butter cut into cracks, as it lies in the churn, to receive the salt, which should be a pint for fifty pounds, regulating below that, or above that, according to the quantity churned. The butter should then be tumbled in the churn until the salt is mixed with it, and it will

then do to take out in ten or fifteen pounds, and lump into pounds, ready for sponging, which should be done by having a sponge of proper size enclosed in a linen cloth and passed over the lump, by pressure, to absorb the brine and moisture it contains, which should then be weighed and printed if intended for the market. The sponge should be frequently squeezed out of cold water as dry as possible, during the sponging and weighing of fifty or one hundred pounds.

REMARKS.—The butter maker will see the advantage of this mode of salting and working butter over any other mode, and particularly of the lever or worker, as it is called, from the fact that less of it is exposed to a warm atmosphere at a time, as it must necessarily be where fifty or one hundred pounds are operated upon on a broad surface, making the butter soft and oily, which is detrimental to its quality, however carefully attended to, from the time the milk is taken from the cows. The above plan was perfected by experiment by me, and carried out for a succession of years, as thou knowest, with a success as to quality and sale of my butter not surpassed by any one at the time I was operating.

Which is the best Cow for all Uses?

There is a great variety of opinions on this point, and it is only by taking the evidence of experienced men, that we can arrive at any just conclusion on the question. We will give from time to time all we can gather, that our readers may know on which side the preponderance of evidence is. The following is from an eastern journal:

The Jersey or Alderney cows are considered admissible for the dairy. They are celebrated for the deep yellow color, the exceeding richness of their milk, and for their ugliness, though they have been improved in this respect in thirty years. Several importations have been made into New England and the Middle States. One cow has been known to produce 19 pounds of butter in a week. The butter is very yellow and rich. The milk of two Alderney cows, added to that of ten or twelve ordinary cows, improves the quality of the butter or cheese vastly. Mr. Thos. Motley, of West Roxbury, Mass., has several of these remarkable little cows.—The average daily quantity of milk is only ten quarts, but seven quarts make a pound of butter.—He sells the butter always at an advanced price.

Mr. Coleman certifies that he saw in Leicestershire a cow of a cross between a Durham and Alderney, which gave sixteen pounds of butter per week for ten successive weeks, upon grass only; and in Hampshire he saw a Jersey cow that produced fourteen pounds per week for thirteen weeks.

THE MARYLAND FARMER & MECHANIC.

AT \$1.50 PER ANNUM,
PUBLISHED ON THE 1ST OF EACH MONTH,
BY
S. S. MILLS & CO.
No. 24 South Calvert Street,
CORNER OF MERCER,
BALTIMORE.

S. SANDS MILLS, } PUBLISHERS AND PROPRIETORS.
E. WHITMAN, }

BALTIMORE, MAY 1, 1864.

TERMS OF SUBSCRIPTION:

\$1.50 per annum, in advance.
6 copies for \$7.50—10 copies for \$10.
And one copy to the getter up the club.

TERMS OF ADVERTISING:

For 1 square of 10 lines, or less, \$1 for each insertion.
1 page for 12 months.....\$100 00
1 " 6 " 60 00
1 " 12 " 60 00
1 " 6 " 35 00
1 page Single insertion, 15 00
and \$10 for each subsequent insertion, not ex-
ceeding five. Cards from 10 to 15 lines, yearly,
\$10—half yearly, \$6.

Sale of Large Estate in Howard County.

It affords us pleasure to learn that PHILIP TABB, Esq. has lately become the purchaser, for the sum of \$78,000, and with a view to making it a grazing farm for high grades of stock, of the well known estate called "Oakland," lately belonging to Geo R. Gaither, Esq., lying in the neighborhood of Elliott's Mills, and containing some 1400 acres of excellent land. This purchase, together with that of the "Hare" farm, containing 350 acres and lying in the same vicinity, gives us the assurance that this branch of our agricultural interests will soon receive an impetus at the hands of this public spirited gentleman, which cannot fail to be of the greatest service in improving and keeping up the standard of our hoof and horned cattle. We look forward to marked results from his energy and judgment and heartily congratulate the farming public, in advance, upon the enterprise.

And Advertisers, for the future, will be good to send in their copy by the 25th of the month.

GREAT SALE OF BLOODED STOCK.

Generally speaking, we are opposed to the practice of lending our editorial columns to the notice of advertisements, and it is only upon some occasions, such as the present, that the public interests, which it is our duty to foster, seems to demand a relaxation of the rule. Were we not, at this moment, fully persuaded that the sale to which we are about to allude is of all things the most desirable in a business point of view, to a large majority of our rural readers, the occasion would be suffered to pass in silence; but, knowing as we do that such an opportunity is not presented to the farmers of this State and its vicinity, of replenishing and multiplying their stock of blooded animals more than once in a cycle of many years, we feel under no restraint—on the contrary we are only discharging what we think our rigid duty—in calling attention in a pointed manner, to the great sale of Messrs. N. R. Smith, J. Howard McHenry and John Merryman, who are among the most prominent and successful breeders of superior stock in our State, a notice whereof by Samuel G. Wilson, Auctioneer, is to be found in another column, of blooded horses and cattle, which is to take place at Govanstown, near Baltimore, on the 24th instant, lest some of our numerous readers, who are interested in the subject, should inadvertently overlook it.

In addition to the celebrated stallion Mars, whose pure and undoubted blood has coursed through the veins of many of the most celebrated horses of modern times, and the Percheron stallion Little Corporal, whose well known power and elasticity of limb and muscle, proclaim him to be of the pure Norman line, there are to be exposed for sale some 75 head of thorough bred Alderney, Devon, Hereford and grade cattle. The Alderney's are no less celebrated for the richness of their milk and cream than are the Devons and Herefords for the tenderness and delicacy of their flesh as beef cattle; and we repeat it, that the sale of so many thorough bred of these breeds, scattered, as they are likely soon to be, over all parts of the State, may be well considered as a public benefaction. It is true no one will be likely to purchase at this sale without a special view to their own special interests, but every county and every neighborhood in which they are introduced must share measurably in the benefit, and that they may do so, is our only desire in the matter.

Catalogues of the sale will be ready by the 6th inst., which can be had by application to this office, either personally or by letter.

GENERAL AGENCY.—We have received from our old friend, Robert Bowie, 425 E. street, Washington, a circular announcing his agency for all claims against the Government, and for the purchase and sale of lands, in any of the States. His associate is J. W. deKrafft, late clerk of the U. S. Land Office. We commend them to the public.

CAPITAL INVESTED IN REAPERS & MOWERS.

The vast amount of capital invested in labour-saving machinery in this country has been always a matter of comment, and has multiplied, many thousand fold, the productive industry of the country. Not, however, until of late years has the genius of the mechanic entered and triumphed in its true field of labour, and created, as it were, to no small extent, those immense agricultural resources which, in times of peace, bade fair to make our country the granary of the world; and which during this most terrible of wars, so greatly curtails the number of operatives in field and factory, enables it to feed and clothe the immense army now afoot and to have something to spare besides. The rapid increase of the number and value of agricultural machines of all kinds is becoming a matter of growing interest even to those familiar with the subject, and to those unprepared by previous knowledge, it would, if accurately known, be a matter of lively astonishment.

What is now transpiring in a limited part of the State of New York, and in the States lying between it and the Mississippi, in the matter of building a single machine, the reaper and mower, will serve to throw some light on the immense amount of work now going forward in that department alone; and for that purpose we append the following table which we have received from a correspondent perfectly reliable in such matters, of the names, number, and localities of the machinery now being manufactured.

REAPERS AND MOWERS IN PROCESS OF MANUFACTURE FOR 1864.

<i>Manufacturers and Location.</i>	<i>Mowers.</i>	<i>Reapers.</i>
C. H. McCormick & Bros., Chicago, Ill.		6000
"J. H. Manny," Emerson and others, Rockford, Illinois.		4500
Geo. Esterly, Whitewater, Wis.		600
Jno. P. Manny, Rockford, Ill.		4000
Seymore & Morgan, at two places.		2000
"Hubbard," at seven places.	6500	1500
Cayuga Chief, Auburn, New York.	1200	2500
Whitely & Co., Springfield, Ohio.		600
Pritz & Kuns, Dayton, Ohio.		750
Long, Black & Allister, Hamilton, Ohio.		750
Ball, Canton and other places.	2000	3500
Buck Eye, five places.	4000	6000
W. A. Wood, Hoosier Falls, N. Y.	5000	2000
Wood's at other places.	2500	
R. L. Howard, Buffalo, New York.		1500
"Auburn, N. Y."	1000	3000
Baldwin & Devitt, Cleveland, Ohio.	1500	400
Burt.		150
Beloit, Beloit, Wis.		400
Fountain, Rockford, Ill.		2000
Webber.		200
Kentucky Harvester, Miller & Wingate, Louisville, Kentucky.	200	300
Davenport, Davenport, Iowa.		200
Folry, Racine, Wis.		500
Patch, Louisville, Ky.		200
Kirby, Cambridge City, Ind.		1000
Quaker, Taber & Co., Ohio.	1250	1250
Marsh, Plane, Ill.		50
Kingland & Ferguson, St. Louis,	200	
	25,350	44,050

This table, it will be seen, sums up an aggregate of 44,050 reapers, and 25,350 mowers. At an aver-

age cost of \$150. for the reaper and \$100 for the mower, which we think a safe estimate, it represents a money value of \$9,142,500. It will be borne in mind that this list does not include any one of the New England States, where perhaps, more mowers are in use than in all the rest of country put together, or any State west of the Mississippi or south of the Ohio; neither does it embrace any part of New Jersey, Delaware, Pennsylvania or Maryland—all of them grain growing States, and some upon a most extensive scale. It will be perfectly safe, therefore, to add 50 per cent. to the table, as the value of those additional reaping and mowing machines which may now be in process of manufacture in the localities from which we have no data. This would increase the number of reapers to 66,075 and of the mowers to 38,025. Calculating the value of this increased number by the same average cost, we have the aggregate sum of \$13,713,750. The number of horse powers and threshers brought into employment by the reaper alone, cannot be less than 75 per cent. of their own number. Add this percentage to the sum total, and the amount at once ascends to \$23,999,062—nearly twenty-four millions of dollars.

If at this period of depression in the business of the country, such an amount of capital is invested in a single year and in the limited territory described in the production of a machine for one species of labour, what in times of greater prosperity, must be the vast amount which annually finds its way throughout the whole country into agricultural labour-saving machines in general? We venture to say that the amount, if known, would almost be considered fabulous, and it is perfectly rational to believe that without it, instead of being able to supply our own labouring population and the vast non-producing army now afoot, we should be dependent upon foreigners for our daily bread.

DRY GOODS.—To those whom the bright skies and genial airs of spring remind of the necessity of looking up and replenishing their wardrobes for the season, we present the compliments of Messrs. Hamilton Easter & Co. and also—their advertisement in another column. We believe there is nothing in their line, in demand by either sex, of any age, that cannot be there obtained, as they have come to be regarded the *Stewarts* of this locality.

THE OHIO MOWER AND REAPER.—The agriculturists of the West, whose operations have ever been on the most extensive scale, have never been behind those of other sections in the production of efficient machinery to promote and expedite the operations of the field. The machine whose name stands at the head of this paragraph, has a high degree of popularity in the west, and its usefulness is now beginning to be appreciated in this section. For sale by A. G. Mott. See advertisement.

Labor saving Machinery for 1864, of all kinds and descriptions is offered by E. Whitman & Sons, 24 S. Calvert street, where are manufactured and for sale every thing needed by the farmer, from the huge hay press to the diminutive screw wrench.

Draining and Liming of a Tenant Farm in the South of Scotland.

We have received from a gentleman in this city the *Berwick Advertiser*, (Scotch paper) of October 31, from which we extract the following obituary notice, for the reason that it contains an account of draining and liming, which seem to have been upon a most extensive scale, of a farm in Scotland.—Such improvements are worthy the imitation of our agricultural readers, the more especially as they are proprietors of the soil they occupy, while Mr. Logan was only tenant of the farm he so highly improved.

THOMAS LOGAN, Esq., WOODEND.

In ours of the 10th inst. we recorded the death of Thomas Logan, Esq., farmer, Woodend, Berwickshire. Mr. Logan was one of the most extensive, enterprising, and successful of the agriculturists of the south of Scotland. On the death of his father, Robert Logan, Esq., he succeeded to his lease of the farms of Woodend, and Choicetee, on the estate of Langton (then the property of the late Marquess of Breadalbane), extent 1000 acres arable. In 1859 he entered upon a new lease of these farms at an advance of £500 on the former rent, and also took the sheep farms of Stotswood and Otterburn, on the same estate, extent 2000 acres. During the first two years of his lease he completed the drainage and liming of his arable farms at a cost of about £7000, (£35000). Mr. James Sanderson, land-valuer, London, in his pamphlet on "The Agriculture of Berwickshire and Roxburghshire," thus describes the improvements made by Mr. Logan:—"The farm of Woodend, Dunse, is a singular—it might be said unprecedented—example of expeditious improvements. The farm contains 1000 arable acres, and the soil is chiefly of a loamy character. The fields vary from 20 to 60 acres, and are well laid out with straight fences. The farm is exceedingly well managed; for turnip-culture especially, the tenant, Mr. Logan, is not surpassed. Mr. Logan entered on a new lease of the farm at Whitsunday 1859. During the first year he limed 700 acres at a total cost of £3500; in the same year he drained 600 acres, the drains 3 feet deep and 30 feet apart, at a cost of £2520. Simultaneously with these operations Mr. Logan was engaged in driving carriages for two steadings, which cost the proprietor £2000. Mr. Logan intends to complete the whole drainage and liming of the farm this season." Mr. Logan, by his gentlemanly conduct and frank obliging manner had won the esteem of all classes in the neighborhood. To the farmers of the district his premature death is a severe loss, as he was always ready to give advice and direction to all who consulted him on agricultural subjects. His death has cast a deep gloom over the neighborhood.

Agricultural Department of the Pittsburg Sanitary Fair.

The Alleghany (Pa.) County Agricultural Society offers a premium of \$500 to the Agricultural Society, or the contributors of the County which shall donate to the Sanitary Fair at Pittsburgh, the largest amount in value of Live Stock—Alleghany county not to be a competitor for the premium.

BLOODED SIRE FOR TROTTERS.

An opinion is beginning to prevail, based upon the soundest principles of logic, as well as upon the universal experience of adepts, both at home and abroad, that the employment of blooded stallions for the production of fine trotters, is always attended not only by the most marked improvement in the character of the stock, but that no very great improvement can be now effected without it. Indeed we may say that this is no longer an opinion, but a settled and just conviction on the part of those whose interest it is to know. And as an inferior animal costs no less to keep than one of a high degree of excellence, we consider it of no small importance that the stock raisers of our State should be fully alive to the subject, and apply themselves sedulously to this rational and certain means of keeping up and improving the strength, style and action of their trotting animals. For the production of mere draft horses there is, apparently, no necessity to resort to the blooded stock; but for trotters, when style, spirit and endurance are required, it can be most efficaciously employed. If, as must be acknowledged by all, excellent trotters are obtained by the employment of half-breed stallions, it is only a stronger argument for the use of the full blooded sire, from whom a still greater improvement must naturally result.

With this single hint upon the subject, we leave the matter to the consideration of those more especially interested, confident that much improvement will be made in our domestic stock by utilizing the suggestion it contains.

BURNED TILES FOR DRAINING.—These articles, so essential for the proper performance of the work of draining, need no longer be purchased of second or third hands as is the case with those made in the northern States, but may now be procured warm from the kilns of the manufacturer, Mr. Henry Gibson at Locust Point, Baltimore, Md. For sorts, sizes and prices, see advertisement in another column. Specimens of Tile can be seen at our office.

As every wise man should do—if he understands his own interest—Thomas Norris, 141 Pratt street, having "Good News for Farmers," boldly announces it for the public good, through our columns. He cheerfully declares that notwithstanding the scarcity of labor, wheat can be saved by Woods' Self-raking Reaper—and grass by Woods' Prize Mower. He also offers Threshers of various patterns—harvesting tools, seeds, trees, &c. See his manifesto.

OLDENBERGH & CRESSON'S PREMIUM ATMOSPHERIC PRESSURE CHURN is said by the proprietors, whose advertisement is to be found in another column, to make the only butter which will command the highest premiums. If they had only demonstrated that it would make butter a little cheaper we would have bought one ourselves, but as it is not likely to effect this desideratum, we avail ourselves of one of their patent machines to wash our hands of the subject.

The thorough-bred stallion Mars will stand during the season at Pikesville, Belair and Westminster.

COMMUNICATED.

THE EFFECT OF LIME ON CLAY.

Some time during the month of March we received a communication from a subscriber in Frederick referring to the action of lime on clay, and enquiring, in a doubtful frame of mind, whether potash was one of the natural constituents of the latter.—To this communication we at once called the attention of Professor Liebig, Analytical Chemist, of our city, whose opinion is acknowledged as of the highest authority in such matters, and we have the pleasure of submitting from him the following reply:

Baltimore, April 19th, 1864.

To the Editors Maryland Farmer:

On page 115, April number of your valuable paper, there appears a communication from a subscriber in Frederick, who, referring to a statement of "*The Culturist*" on the effects of lime on clay, doubts its correctness as to the presence of Potash in Clay.

A few brief words on this subject: Pure clay is silicate of alumina, i. e. a combination of silicic acid with alumina and water, mostly two atoms of the former to one of the latter. But this mineral, which is known as Kollyrite, Pholerite, etc., etc., is of rare occurrence, comparatively speaking.—What we commonly call clay is the result of disintegration of various aluminous rocks, such as Felspar, Albite, Gneiss, etc. and is therefore, in the state as nature supplies it, a mixture of different silicates, which, presenting a series of minerals perform a prominent part in agriculture by forming earthy matters. Being a compound of silicate of alumina, free silicic acid, alkaline silicates, and more or less undecomposed fossil, it is called porcelain clay, or kaolin, when found at the same places, where it has been formed; or clay in general, when removed and subsequently deposited by floods, (deluvial clay.) The former is white, fine and mixed with Quartz and Felspar; the latter, on account of the water having undulated, also other rocks, is less pure, and yields lime, magnesia, oxides of iron, sand, mica, alkalines, bituminous and coaly matters in various proportions, producing thereby different physical and chemical properties, and establishing a whole series of mineralogical species, down to the slates and marls, which, to enumerate, is not my object.

It is evident, that clay in all its numerous states of disintegration, will yield different proportions of alkalines, potash and soda, when these were component parts of the rocks, from which it was formed. This has been proved by recent analysis of German chemists, who found potash from $1\frac{1}{2}$ to 3 per cent. in deluvial and fire proof clay of the Keuper formation.

Experience has long ago demonstrated the beneficial effects of lime on stiff loamy and turfy lands. It renders the former light, porous and more apt to absorb atmospheric nourishment, and neutralizes, by its strong basic properties, the organic (humus) acids of the latter.

But its main action is based—

First—On the invigorating influence it exercises upon the fermentation of the vegetable and animal matter in the soil in accelerating their oxidation, by the atmospheric oxygen, thus liberating carbonic acid and ammonia, which important nourishments are rapidly absorbed by the roots and leaves of the plants.

Second—On the prominent part it performs, when applied as quick or water slaked lime in the decomposition of the mineral bodies of clay soils, where, as Stockhard has proved by experiments, silicic acid and potash are rendered soluble in water. Such lands will allow heavy manuring with this material.

Not less important is the function of lime in moory, or swampy woodlands, as it will destroy the damaging effects of the black oxide of iron or its soluble combinations, which often occur in such lands.

It is obvious from the above, that lime cannot be called a fertilizer proper, inasmuch as it does not add any fertilizing ingredients to the soil, but is a mere preparer of plant food, and should, therefore, not be overrated by the agricultural community.

G. A. LIEBIG.

FOR THE FARMER.

The Value and Importance of Steam Machinery in Agriculture.

The fact that the city of Baltimore has for a long time manufactured and produced Agricultural Machinery and Implements of a very superior quality, is well established. The enterprise and energy of her artisans and mechanics in this branch of manufacture, have secured to her a fairly earned reputation. Considered apart from the great and intrinsic value of the articles themselves, many circumstances have combined to bring about this result, foremost amongst which are the great value and variety of her wood, timber, and iron, together with the cheapness of her coals, which are advantages of no little importance in promoting the introduction of steam for all agricultural purposes.

At this particular crisis, when it is almost impossible to procure manual labor, which when obtained, is at prices so exorbitant, as to amount almost to a prohibition against its employment—the entire disorganization of the old system of slave labor, and the high price and value of horses and horse feed, all seem to combine and call for the best exertions of the mechanical and scientific talent of


the country to exert its best energies to supply the desideratum, more especially since the future presents no hope of relief. It is admitted that near 3,000,000 of men—the young and athletic—have been taken from the laboring classes, leaving behind the more helpless and dependent part of our population.

The Scientific American, that most useful and excellent paper, has recently contained several excellent and suggestive articles on this subject, and there can be no better proof of the value and feasibility of the application of steam to agriculture, than the advocacy of Messrs. Munn & Co., who are so judicious and prudent upon all subjects relating to practical science, mechanics and manufactures.

There is another argument in favor of the success of an effort to effect this important result. When the careful observer looks back and examines the improvements made in agricultural implements and machinery, he must be convinced that all is not yet accomplished. Had he lived when the wooden plough of our own country, or the crooked root of a tree was used by the ancients—when the sickle, the scythe, the cradle, and the hand rake, were in vogue, or when threshing was done by the flail or the trampling of horses and oxen—and had been then told of the iron mould-board and share, and the entire iron plough—the mowing and reaping machine, with the mechanical horse rake attached, the horse hay rake, and the almost infinite variety of machinery now substituting horse power for manual labor, he would have laughed at the man who suggested such things, and considered him almost insane.

The success of the steam engine in England is a fixed fact, but its general introduction has been retarded from causes unnecessary to refer to at this time and place. It need only be said that their great weight, cost, and mistaken form and construction have contributed to their partial failure, but this need not discourage or deter the mechanics of our country.

With your approbation this subject will be continued, and further suggestions made as to the feasibility and practical result of the undertaking, its great value to the country, and the credit and profit likely to accrue to the inventor and manufacturer.

 **GET UP CLUBS OF FIVE.**—There is no neighbourhood in which a club for the "FARMER" cannot be raised—and if only five subscribers are obtained, a sixth copy will be received by the person getting up the club. Surely every head of a family should feel some interest in having such a work as the *FARMER* read by their household. Not a line will be found in its pages, but will be calculated to interest and instruct every member, from the oldest to the youngest. 5 copies, \$7.50; 10 copies, \$10.

DOMESTIC RECIPES.

LEMON PUDDING.—Take two large lemons, squeeze the juice and grate the peel; take nine eggs, leave half the whites; one pound of loaf sugar, one-third pound of butter, rose water, pint of cream, half pint of bread crumbs. Mix butter and sugar together, then add the other ingredients, and do not put in the lemon juice until quite ready for the oven.—Bake half an hour.

FRENCH BISCUIT.—Take three new eggs and their weight in flour and sugar; beat the whites to a fine froth; then by degrees mix in flour and sugar; then the yolks. When all are added, take a spoon and drop your biscuits on sheets of paper, and powder with sugar, camomil or caraway seed. Bake in a moderate oven.

SOFT GINGERBREAD.—One cup of brown sugar, 1 cup of molasses, 1 cup of milk, 4 tablespoons of ginger, 3 cups of flour, 2 eggs. 1 tablespoon of cloves, 1 do. of cinnamon, 2 do. of cream of tartar, dry, 1 do. of soda, in a little milk.

DOVER CAKE.—One pound of sugar, 1 do. of flour, $\frac{1}{2}$ do. of butter, 6 eggs, 1 cup of milk, 2 teaspoons of cream of tartar, 1 of soda, in a little milk; flavor with lemon or spices to your taste.

FRIED POTATOES.—How few people know how to fry potatoes. There is nothing so easy to get and yet so palatable for breakfast, with a thick, tender beef-steak, or a mutton chop fizzing from the grid-iron. To fry raw potatoes properly, they should be pared, cut lengthwise into slices an eighth of an inch in thickness, dropped into a pan over the fire, containing hot beef drippings, turned frequently, nicely browned all over but never burned. The addition of a little salt and pepper, while in the pan, and a little flour dredged over them, is an improvement.—[So says some anonymous but sensible cook. We have, however, found that butter, instead of the "beef dripping," answers well. Every one to his taste.

CHEESE CAKES.—Boil a pint of new milk; heat five yolks and two whites of eggs; pour in the eggs when the milk boils and then drain the curd until quite dry. Take half pound of almonds, beaten fine, and mix with the curd; then beat in four yolks and two whites of eggs; stir in six ounces sugar, quarter pound butter melted in rose water. Bake in tin patty pans lined with paste.—*Ger. Telegraph.*

FRENCH TOAST.—Take a loaf of light bread and cut it into slices—mix three eggs—three tablespoonfuls of sugar, and a tea-cup of milk, taking care to beat the eggs until they are very light. Soak the bread in this custard. Have some lard boiling hot, enough to cover the bread, and fry it until it is brown—then serve it up hot.

Live Stock Register.

THE PERCHERON NORMAN HORSE.

An English writer in *The British Quarterly Journal of Agriculture*, speaking of the general working horse of Normandy, says: "The horses of Normandy are a capital race for hard work and scanty fare. I have never seen such horses at the collar, under the diligence, the post-carriage, the cumbrous and heavy voiture or cabriolet for one or two horses, or the farm cart. They are enduring and energetic beyond description; with their necks cut to the bone, they flinch not; they put forth all their efforts at the voice of the brutal driver or at the dreaded sound of his never-ceasing whip; they keep their condition when other horses would die of neglect and hard treatment. A better cross for some of our horses cannot be imagined than those of Normandy,

The Celebrated Original Imported Percheron Stallion CHARTRES.



The property of Charles Carroll, of Howard County. Engraved by Hart from a photograph by Pollock. provided they have not the ordinary falling of two much length from the hock downward, and a heavy head." The two points last named are precisely those which are entirely got rid of in the best style of Percheron Normans, which are those of the Normans most deeply and thoroughly imbued with the Arabian, or, to speak more correctly, Barb blood of Andalusia. It is not easy to procure the best and fastest stallions of this breed, as they are bought up by the French Government for the diligence and mail service, for which they are highly prized, and in which they are constantly kept at a pace varying from five to nine miles an hour, over roads and behind loads which would speedily kill an English or American horse, without loss of health or condition. But there is difficulty in obtaining the choicest mares at comparatively low rates—mares being little valued for work in France. Mr. Edward Harris, of Moorestown, N. J., who has been at much pains to import fine horses and mares of this breed, asserts of his horse "Diligence" that he has produced above four hundred foals—that he has never heard of one fetching less than one hundred dollars, and many much higher prices, and that he has never heard of his producing a worthless colt, or one that is spavined, curbed, ringboned, or has any of those defects which render utterly useless so large a number of fine-bred colts of the present day.

Norman stallions are the only male horses which we would ever put to any lighter mares of American blood; but we are strongly of opinion that the Morgan mares and the ordinary better class American farming mares, which have some indefinitely remote cross of better blood than the cart horse, can be made to produce a progeny highly improved, hardened in bone, bettered in legs, feet, and constitution, and more adapted for being the mothers of fine, large carriage-horses, by breeding them to Normans, whether native or imported. It is a remark-

able quality of the Normans, that though small themselves, when crossed,—either males to other races, or females to thorough-breds,—they almost invariably breed larger instead of breeding smaller than themselves.

A USEFUL HINT TO HORSE KEEPERS.—A gentleman who has tried the plan successfully for five years, communicates the annexed method of preventing horses from chafing under the collar. He says he gets a strong piece of leather, and has what he terms a false collar made, which is simply a piece of leather cut in such a shape as to lie snugly between the shoulders of the horse and the collar. This feeds off all the friction, as the collar slips and moves on the leather, and not on the shoulders of the horse.—Chafing is caused by the friction, hence you see the thing is entirely plausible. Some put pads or sheepskins under the collar, but these do as much harm as good, for they augment the heat. A single piece of leather, like that composing the outside of a collar, is sufficient.

THE HEREFORD BREED OF CATTLE.

In a lecture on the History, Progress and comparative merits of the Hereford breed of cattle, which was read last December before the Royal Agricultural College at Cirencester, Mr. Duckham, after establishing the fact that the Herefords are an aboriginal race of cattle, taking their name from the county which constitutes the seat of the breed, entered quite minutely into the peculiar qualities which have rendered the Herefords so famous for their fattening properties, and therefore the best stock for the grazier and general breeder, and also for the superior excellence of their meat. Of the aptitude of the Herefords to take on fat, Mr. Duckham cites the following instances :

In that extremely interesting and valuable history of the Smithfield Club, compiled with great care, and published by their indefatigable Honorary Secretary, Mr. B. T. Brandreth Gibbs, there is a fund of information given to the world which very probably would otherwise never have been made known. From it we learn that at their first show Mr. Westcar's prize ox measured 8 feet 11 inches long, 6 feet 7 inches high, 10 feet 4 inches girth, and that he was sold for a hundred guineas; and from the dimensions given upon this coloured print, together with the names of the feeder and purchaser, all corresponding with the particulars I have just read to you, I have no doubt it is intended to represent that identical animal; if so, he was bred by Mr. Tully, Huntington, near Hereford; his weight was 247 stones; and although not of the form we would expect to see upon entering Islington Hall next week, yet it is an interesting picture, inasmuch as the distinctive marks of the red with white face of the present day are here set forth, with the exception of the white stripe which now extends along the neck and just over the shoulders, being here shown as far as the hip bones, and also the lower part of the legs red instead of white. Enormous as the dimensions of that animal were, they were thoroughly eclipsed by another Hereford ox, fed by Mr. Grace, from Bucks; he is said to have measured 7 feet high 12 feet 4 inches girth, and to have weighed 260 stones.

His description of the four classes of Hereford is as follows:

When Mr. Eyton commenced his labours with the Herd-Book, he found it requisite to divide the Herefords into four distinct classes, namely, the mottle-faced, the dark-grey, the light-grey or white, and the red with white face. Yet, after the lapse of only eighteen years, the all but universal appearance of the red-with-white-face Hereford is such, that when any animals of either of the other classes are exhibited, the purity of their blood is questioned by those who are not cognizant of these facts. Indeed, so far back as 1857, the *Mark Lane Express*, in its report of the Birmingham fat show, asks, "Is there such a thing as a white Hereford? There was one entered and shown as such, though we rather question if he claimed kindred here whether he would have that claim allowed." This query was answered by myself in the affirmative. The present uniformity of color and marks is due to the influence of the bull; and I think goes far to prove it to be the original breed, let the other classes have

sprung from whatsoever accidental or other causes they may.

All the classes are of the middlehorn tribe; and so closely do they assimilate to each other in their principal features, that they are recognized as equally pure-bred when entering the arena of competition. In Vol. 1. you will see a coloured engraving of a choice specimen of each class, which will more readily convey to your minds their character than any description in words which I can place before you.

The mottle face, as the name denotes, had red marks intermixed with the parts usually white, namely, the face, feet, &c.; occasionally those spots were of a very dark color, the horn was long and wavy, with a slight upward tendency, and tipped with black; their skin was particularly mellow, of a moderate thickness, and well covered with plenty of soft glossy hair; they were not usually good upon the chine; and although not generally so docile as the other classes, yet they displayed great aptitude to fatten.

The dark-greys were frequently to be found intermixed with them in the same herd; they were so called from the broad white stripe which extended the whole length of the back, and also the parts usually now white on the different parts of the body being thickly interspersed with small red spots: their horns were rather shorter, and had a more upward tendency, they were also smaller in size and smoother in their hair than those of either of the other classes; better on the chine than the mottle-faces; they fed very even, and their flesh was of very excellent quality.

The mottle-faces were known as the "Tomkin's breed," although that eminent breeder always maintained that his bull Silver (41), which was a red-with-white-face, was the best stock-getter he ever had; and as he was bred by him in early life, he formed the foundation of his breeder's future eminence: thus it appears rather strange why he should have diverged from the red-with-white-face breed.

The Hereford of the first class, as now recognized, may be known by the following description:

The face, throat, chest, lower part of the body and legs, together with the crest or mane, and the tip of the tail, a beautifully clear white; a small red spot on the eye, and a round red spot on the throat, in the middle of the white, are distinctive marks which have many admirers. The horns are of a yellow or white waxy appearance, frequently darker at the ends; those of the bull should spring out straightly from a broad flat forehead, whilst those of the cows have a wave, and a slight upward tendency. The countenance is at once pleasant, cheerful, and open, presenting a placid appearance, denoting good temper, and that quietude of disposition which is so highly essential to the successful grazing of all ruminating animals; yet the eye is full and lively, the head small in comparison to the substance of the body. The muzzle white, moderately fine, cheek thin. The chest deep and full. The bosom sufficiently prominent. The shoulder-bone thin, flat, and sloping towards the chine: well covered on the outside with mellow flesh; kernel full up from shoulder-point to throat; and so beautifully do the shoulder-blades bend into the body, that it is difficult to tell in a well fed animal where they are set on. The chine and loin broad; hips long and moderately broad; legs straight and small. The rump forming a straight line with the back, and

at a right angle with the thigh, which should be full of flesh down to the hocks, without exuberance, twist good, well filled up with flesh even with the thigh. The ribs should spring well and deep, level with shoulder-point; the flank full, and the whole carcass well and evenly covered with a rich mellow flesh, distinguishable by its yielding with a pleasing elasticity to the touch. The hide thick, yet mellow, well covered with soft glossy hair, having a tendency to curl. Such are the requisite characteristics of a first-class Hereford.

Of their aptitude to fatten, and concerning their milking qualities, he remarks :

In the commencement of this paper I gave extracts showing the almost fabulous size attained by the Herefords exhibited in the early days of the Smithfield Club. In those days oxen were as highly esteemed in the county, the seat of their breed, for their working powers, as by the grazier for their meat-producing properties. Possessing as they did the weight of the shorthorn, with the activity of the Devon, they were very valuable for that purpose, being broken to the plow at two and under three years of age; they were kept by their breeders in the teams for two or perhaps three years; they were then sold to the grazier, and at about six or seven years old they found their way to Smithfield of the gigantic size I have mentioned. But the wants of the rapidly-increasing population of this nation have rendered a quick supply of meat requisite to meet the demand; and the great aptitude to fatten, and early maturity of the Herefords, admirably adapting them for that purpose, their working powers have been dispensed with, and they have gradually, and I may say almost imperceptibly, passed from their breeders year by year at an earlier age to the grazier; and thus we now rarely see them in the county exceeding three years old. Many of them have this year been sold from their pastures under that age, at prices varying from £25 to £30 each, without having tasted any kind of artificial food. Therefore, although we cannot now boast of our oxen of the present day, when they appear at the Smithfield Cattle Show, as standing 7 feet high, and girthing 12 feet 4 inches, yet we can and do pride ourselves upon their long cylindrical massive frames upon low legs, being evenly covered with heavy flesh of a girth surpassing that of most other breeds; and I consider the weight of Mr. Shirley's steer of 153 stones at 2 years 6 months old will very fairly compare with those oxen of Mr. Westcar's, which were 6 or 7 years old, and goes far to prove that although they do not now measure so much in height as they then did, yet that they would become of an equal or greater weight if kept to the same age—thus, no degeneration of their valuable properties are lost, but, on the contrary, a great improvement in quality and evenness of flesh has taken place. In proof of this opinion I could give many more examples, but I feel in so doing I should only further exhaust your patience without any corresponding benefit.

Of the milking properties of the Herefords, much of that depends upon the system adopted by the breeders in rearing the young, and can be greatly improved by proper treatment. I have before said the soil of Herefordshire is neither adapted for feeding or dairy, it being decidedly a breeding county, and little has been done by any to alter this state of things; therefore the progeny generally run with the dam. Sometime a cow is taken to the pail, and the

offspring, when either a steer or heifer calf, is put to assist another calf, thus one cow rears two calves, whilst the other is taken to the pail. But in dairy counties, where the offspring are taken by hand, and the milking properties of the cow well attended to, it has been done with the most satisfactory results, some of which are combined in highly interesting information which I have obtained from several gentlemen of well-known standing in the agricultural world, who have kindly favoured me with the result of their experience, not only in different parts of the United Kingdom, but also from Canada, Jamaica, America, and Australia.

After furnishing a great variety of unimpeachable testimony in regard to the extraordinary value of the Herefords to the grazier and stock breeder, Mr. Duckham concludes as follows :

Of their flesh, Mr. Rowlandson says: "The flesh of the Hereford ox is superior to all other indigenous breeds, for that beautiful marbled appearance caused by the intermixture of fat and lean which is so much prized by the epicure." This fact goes far to account for the cause of the bad sale for Herefords in London markets during the summer months, as experienced by Mr. Franks—the meat being too rich, when well fattened, for the hot weather.

Of their aptitude to fatten in proportion to the food consumed there is an interesting experiment, which although made some thirty-five years ago, and given in "Youatt on Cattle," p. 34, may not be out of place to be briefly mentioned here, as it is strikingly confirmed, not only by the numerous practical opinions I have quoted to you, but also by a more recent experiment made by Mr. Moore at Colehill, and published in the Journal of the Royal Agricultural Society, vol. xxxvii, p. 342, where, after giving the full results of his experiment, Mr. Moore says: "I think it proves this—that the Herefords take the lead in grazing." Youatt says: "Three Herefords and three Shorthorns were selected and put together in the straw yard on the 20th December, 1827, and were fed in the open yard at the rate of one bushel of turnips per day each, with straw only, until May 2d, 1828, when their weights were taken, and they were sent to grass; the Herefords weighed 23 cwt. 2 qrs., the Shorthorns 27 cwt. On the 3d of November they were taken from grass and put into the stalls, when their weight was—Herefords 33 cwt., Shorthorns 38 cwt. 14 lbs. From that time until the 25th of March the Herefords consumed 46,655 lbs. turnips, 5,065 lbs. hay; the Shorthorns 59,430 lbs. turnips, 6,779 lbs. hay. They then weighed—the Herefords 37 cwt. 14 lbs., the Shorthorns 43 cwt. 2 qrs., being an increase of weight from the first weighing of 2 cwt. 3 qrs. 14 lbs in favor of the Shorthorns, but they had whilst in the stalls consumed 12,775 lbs. more turnips, and 1,714 lbs. more hay. On the 30th March they were all sold together at Smithfield, when the Shorthorns fetched £97, the Herefords £96, being an overplus of only £1 to pay for the enormous difference in the food consumed, and the greater price given on account of the heavier weight of the Shorthorns at the commencement of the experiment." Besides, there is one point unnoticed in Youatt, viz., the additional consumption of food from the 2nd of May to the 3rd of November, which it is only fair to presume was in the same proportion. If further proof were wanting that they are small consumers in food in proportion to the meat they make, I think the very form of the aged animals of the breed dis-

plays it; as, no matter to what age they are kept, they rarely exhibit any superabundance of offal.

I consider I have now shown sufficient in confirmation of the opinions I advanced at the commencement of this paper, viz.: that the Herefords, although an acknowledged aboriginal race of cattle indigenous to the soil of the county from whence they take their name, readily becomes acclimatized, and retain their general character, not only throughout the United Kingdom, but wherever they have been fairly tried in distant parts of the world; also, that they continue fully to retain their reputation, which has for ages past been accorded to them, for aptitude to fatten; that the quality of their meat is unsurpassed, if equalled; that it is duly appreciated wherever they have been tried; that, by proper management, their milking qualities are good; that for early maturity and hardness of constitution they are equal if not superior to any known breed; that they are a most valuable race of animals for their working powers when required; and that whenever they have been fairly tried, the quantity of meat they make, in proportion to the food consumed, is such that they can justly claim to rank amongst the most valuable class of animals known for the production of animal food, and therefore the most profitable breed of cattle for the grazier.

RAISING CALVES.

In this day of high-priced cattle there are still those who believe that it will not pay to raise calves. If it ever did pay, it certainly will now, when poor cattle from the West are advancing in price every year, with every prospect of a continuous increase for years to come. I, for one, have not the least doubt as to the profit of in part raising my own cattle, but in order to make it pay it should be well done.

For raising I prefer spring calves, which after they are one week old, should be taken from the cow, and kept not only entirely out of her sight, but also out of hearing, for nothing will so interfere with the growth as the continual worrying for the cow; if kept entirely out of sight and hearing, the calf will soon forget his mother and thrive. For the first three or four days after taking from the cow the calf should be fed three times a day with milk, either as it is drawn from the cow or made warm by artificial heat. Some allow the calf to suck the finger for a week or two, but this is entirely unnecessary, for if the calf is fastened up in a close stable, where he cannot see nor hear any of his kind, he will soon drink without any coaxing at all.

As soon as they have learned to drink properly, I turn them into an orchard or small lot and feed them with skim milk in a trough, exactly as I would pigs. They will soon learn to eat grass, and will only drink the milk instead of water to quench thirst. In this way I allow them to run until fall, living upon grass and what skim milk can be spared them. In the winter they have a good, warm stable, with an open yard to run in during the warm part of the

day. As food they have good clover hay, with an occasional lick of meal or feed of turnips or rutabagas. Nothing makes a better winter food for cattle than sorghum leaves, well cured before being placed in the barn; calves or sheep will leave the first quality of hay in order to eat them. I consider oats to be far preferable to ground corn or barley, for I think the latter are better calculated to produce fat than muscle.

Many farmers act under a mistaken notion of economy in the selection of a bull, some on the score of doubtful economy preferring to obtain the services of a poor one gratis to paying fifty cents or one dollar for the services of one of improved stock. This kind of economy is after the style of placing the finger upon the spile but leaving the bung hole open. There is no difficulty in selling a four-year old bullock of improved stock for ten or fifteen dollars more than one of common breed; this is a fact which cannot and will not be denied by even those who practice this kind of economy. After seven years' experience in the matter I would estimate the actual profit on raising a steer of improved stock until four years old at from twenty to twenty-five dollars. The amount of profit will vary with the amount of improved blood in the animal (but in fact considerably less) to keep this kind of an animal than one of common breed, the importance of raising those of improved stock cannot be over-estimated.

In my mind there is no doubt of the fact that if well done it will pay to raise the young of any kind of stock, and in these times especially that of the cow; but it will not pay to let them "come up" of their own accord, or as Topsy has it, "growed," but they must be taken care of or it will not pay.

What I wish to impress upon the minds of the practical readers of the *Telegraph* is the importance of breeding from improved animals in preference to those of the common or rather no particular breed; if for raising, the calves will make as large an animal at three years old as animals will of common stock will at four; if for veal, calves of improved stock will weigh as much at one week old as common ones will at four weeks old, so that let your object be which ever it may, it will pay, and that well, too.

The same reasoning will hold good for the raising of all kinds of stock common to the farm, and more particularly with regard to horses. Farmers too often, for the sake of saving (?) five or ten dollars, will take their mares to horses not of the first class, forgetting that it costs as much to raise a poor horse as a good one, and that the latter will always sell far more, by four or five times the difference than the former.

Many of those who raise calves have a fixed age

for castrating the males; this is a great mistake, and will often ruin a calf which otherwise would have made a fine shaped steer. There can be no particular age fixed as a universal rule; the rule which I go by is the shape of the animal, governed by a comparison between the fore and hind quarters—if the former are heavy, that is, too heavy to be in just and proper proportion to the hind ones, the calf cannot be castrated too soon, but if on the other hand the fore-quarters are light, and the calf is narrow breasted, much may be gained by delaying the operation. I usually vary the time from one week to six months old.

Farmers differ very materially as to the best food for young calves. During the summer all they need is a good *natural* growth of grass, but in winter they seem to need the best which can be provided, and should have a shelter and yard to themselves. At least, such is my experience.—*Ger. Telegraph.*

Horticultural.

PROPAGATING BY CUTTINGS.

Propagating by cuttings is not nearly so well understood by people generally as it should be. We may say by gardeners, generally. Nearly all soft wood will grow from cuttings, in the hands of a careful person. It is a common way to multiply grapes, currants, gooseberries, &c.; but few persons, unacquainted with horticulture, will attempt the same thing with the raspberry and mulberry, with which, following the same method, they would be nearly if not quite as successful.

So with flowering shrubs, which in propagating, are usually "laid down," there is not the least difficulty, though with some the success is not so uniform as with others. All the arborvitæ can be propagated by inserting the branches of last year's wood four or five inches, without removing the leaves.

Now is the time when this work should be done.—Prepare the bed, dig deeply, pulverize the soil well, and put it in good order. To be sure of the cutting growing, it should be inserted five or six inches in depth, and place from four to six inches apart, the earth being pressed firmly around them. They should be mulched, and watered moderately daily in warm weather when the ground is dry. They can be either potted in the fall, or let remain over winter, slightly protected with a little straw or long manure.

Amateurs should plant grape-cuttings with two eyes, the upper eye being placed even with the ground.—*Germantown Telegraph.*

CARE OF ORCHARDS.

We find the following excellent article on this subject in the March number of the *Working Farmer*, and we commend it, on account of its good practical sense, to such of our readers as raise fruit:

The difference between the successful fruit raiser, and one whose orchards are a constant failure, is measured precisely by the relative amount of care bestowed in the respective cases. We have never known a painstaking cultivator to fail in producing yearly an average quantity of magnificent fruit, while the careless husbandman, who lets his orchard take care of itself, will seldom find it a paying investment. A few years of neglect will destroy the best trees, and render the orchard a worthless collection of dead and dying "cumberers of the ground."

The season is at hand when the most industrious care must be given to apple, pear, and quince trees, in order to insure a fair product of fruit. Trust not the trimming of your trees to ignorant and shiftless "hands," but remember that you might almost as safely confide the surgery of the human body to an unskillful quack. Assume to yourself all important labors of the orchard, and allow no unpracticed hand to touch the sensitive trees except under your immediate supervision. Let all dead branches, all unsightly "suckers," all superfluous branches which keep out the sun and air, be carefully pruned away; then give the trunks a thorough cleansing with whale-oil soap or common soft soap, if the former is not convenient; or better still, use the following soda wash, first recommended by the *Working Farmer*. Its value has been repeatedly tested by many of our readers.

Heat sal soda red hot, and then dissolve it in water in the proportion of one pound of sal soda, thus made caustic, to one gallon of water. This is, as we have frequently asserted, the best tree wash known. If this be applied to the surface of the bodies of apple trees a few times, we shall have no borers, no mosses or fungi of any kind. It destroys the cocoons of insects, and so decomposes all dead portions of the bark, as to cause it to be removed or thrown off by the expanding of the tree. Trees, so treated, look as if they had been scrubbed with great regularity. Unlike potash, it will not injure living portions of the tree, but having decomposed all the fungi, cocoons, ova of insects, etc., the early spring will find trees so treated, ready to avail of nature's laws in the production of fruit, health, growth of wood, etc. This season of the year, while the tree is in its normal condition, the saturated soda wash may be used without the slightest injury, and any portion of the wash that may be carried to the ground will act as a fertilizer.

After the application of this wash a few times, the loose bark and moss may be readily scraped off, and will not appear in any quantity thereafter. Avoid the too common error of whitewashing the trunks of trees. Besides giving the tree an unsightly appearance, the whitewash rapidly changes to carbonate of lime, leaving the surface coated with it, and all the pores filled and rendered comparatively inert by its presence. It is best to apply the soda wash and cleanse the trunks of the trees before the commencement of spring growth.

Another measure of transcendent importance in the preservation of fruit trees, is to keep a sharp look-out, both in the fall and spring, for the borer. In doing this, the greatest patience and perseverance are necessary. The earth should be removed to the junction of the roots, and the surface of the trees rubbed by the hand.

In this manner, the presence of the worms may be usually detected. It requires keen eyes to discover them, but it may be done in young trees by observing a little roughness where the maggot enters and a slight discoloration of the bark at that particular spot. If not removed in the month of November, when the insect is only about three-sixteenths of an inch in length, and can be easily extracted from the bark and sap-wood by a sharp-pointed knife, it becomes very destructive in the spring, working mainly below the surface of the ground. Then it can be detected only by the closest observation, and the surest instrument for their destruction is a sharp pointed knife. After they have struck into the wood and are working upward, a sharp wire, or a bit of sponge fastened to the end of a small wire, and dipped in spirits of turpentine, may be introduced into the hole, and the turpentine is pretty sure to destroy them. But great patience and practice alone can insure the orchards against the ravages of this destroyer.

In regard to manuring fruit trees, we again caution our readers against the use of raw, uncomposited materials from the barnyard. They cause an unnatural growth, soft and imperfect in texture, and incapable of standing our changes of climate. But woods earth and chip manure are admirable fertilizers for the orchard, for they contain proximates in precisely the condition to be reappropriated by fruits. Wood ashes also form an excellent manure for fruit trees, particularly the pear, as they contain a variety of alkaline and other products demanded by the tree. Of artificial manures, superphosphate of lime is required by both the apple and pear tree. Small doses of lime, also, should be applied yearly to apple trees.

Why are teeth like verbs? Because they are regular, irregular and defective.

Ladies Department.

ROBIN'S COME.

From the elm-tree's topmost bough,
Hark! the Robin's early song!
Telling one and all that now
Merry spring time hastes along;
Welcome tidings thou dost bring,
Little harbinger of Spring.
Robin's come!

Of the winter we are weary,
Weary of its frost and snow,
Longing for the sunshine cheery,
And the brooklet's gurgling flow;
Gladly then we hear thee sing
The reveille of the Spring.
Robin's come!

Ring it out o'er hill and plain,
Through the garden's lonely bowers,
Till the green leaves dance again,
Till the air is sweet with flowers;
Waken cowslips by the rill,
Wake the yellow daffodil;
Robin's come!

Then, as thou were wont of yore,
Build thy nest and rear thy young
Close beside our cottage door,
In the woodbine leaves among;
Hurt or harm thou need'st not fear,
Nothing rude shall venture near.
Robin's come!

Swinging still o'er yonder lane,
Robin answers merrily!
Ravished by the sweet refrain,
Alice claps her hands with glee,
Calling from the open door
With her soft voice, o'er and o'er,
"Robin's come!"

FLOWERS.

THE FATE OF THE VIOLET.

The happy Lucille arose early upon her birthday morning, and hastened into the garden; there was to be a brilliant fete that evening in her honour, and she wished to gather the newly awakened flowers ere the sun had stolen their freshness, that they might be woven into garlands, and grouped in vases, to adorn the rooms. "I am to be queen of the festival," soliloquised the young girl, as she passed like a humming-bird from flower to flower, "and will choose the fairest of these garden beauties to wear in my bosom; I will adopt it for my own, and so emulate the peculiar beauty for which it is most admired, that I shall be called Lucille the rose, or the tulip, or whatever flower I may choose; the idea is so pretty! but first I must find a perfect flower."

Thus communing with herself, the young girl passed among the flowers culling the fairest, and filling the broad baskets which had been placed to receive them.

Though all were beautiful, none seemed as yet worthy of her especial choice; and she rested a moment against a marble basin, whence issued a little fountain, and gazed upon the beautiful profusion of flowers which surrounded her.

Just at her feet, and almost concealed by the long grass, grew a tuft of deep blue violets, with the flowers embedded in soft green leaves; the tears of morning yet trembled upon their bosoms, and their breath arose like an incense of gratitude from the freshened sod.

Lucille looked down upon them and spoke:

"You are winning in your gentle loveliness, sweet blossoms of the spring; and I would fain resemble you, but other flowers are fairer, and perchance as sweet; won by their superior charms, I might regret my choice, and neglected you would wither; hide yourselves, therefore, amid your leaves, and if I find none lovelier I will return."

A dew-drop fell from the violet's cup like a tear of patient sorrowing; but the young Lucille bent her gaze upon the fountain, and the lovely face which its clear waters reflected seemed far too brilliant to find its fitting emblem in the humble violet.

"I wish to be loved," thought the young girl, "but I must also be admired; surely there is some other flower which combines the sweetness of the violet with more brilliant charms;" and with a gay smile she passed on.

Won by the gorgeous hues of a magnificent tulip, Lucille stooped to admire it. "Here is a beauty that will attract all beholders," she thought; but as she bent towards it no breath of perfume welcomed her—the splendid flower was void of fragrance.

"What avails beauty without sweetness," she murmured, and sighing sought again a perfect flower. The waving anemone, the brilliant jonquil, the drooping columbine, and stately lilly, each in turn attracted her; but in each there was something which the young girl cared not to imitate, or which left her a charm to desire, and still she found not what she sought.

Suddenly she paused with a cry of delight, for, bathed in the dews of morning, the graceful rose unfolded her rich petals to the sun and perfumed the air with her sighs.

"Behold perfection!" exclaimed the young girl, putting forth her hand to cull the tempting flower; but as she clasped the delicate stem, a thorn pierced her finger, and she started in disappointed surprise.

"These thorns wound my heart," she cried; "beautiful, yet unkind, I dare not cull you, nor choose you as my emblem flower, for I desire not to attract by loveliness and sweetness, only to wound by hidden stings,"—and again she passed on sorrowing.

Wearied with her fruitless search, Lucille threw

herself upon a shaded bank, and thoughtfully compared the varied charms of all the brilliant flowers that she had seen,—then she remembered the gentle violets, and eagerly sought the spot where they bloomed. The sun had mounted high in the heavens when the young girl reached the fountain, and saw the modest turf at her feet.

"Fairest and sweetest," she exclaimed, "behold I have sought amid all the flowers and there are none like you. I find beauty without sweetness, elegance without gentleness, brilliance without modesty. You, in your gentle loveliness, far excel all others of your bright compeers. Come, I will wear you next my heart; your fragrance shall refresh me while your loveliness delights. Yes, I will strive to emulate your modesty and sweetness, and thus deserve at length to be called Lucille the Violet."

She knelt to cull the flowers, but they were withered. Unable to bear the heat of noonday, they had drooped and faded; her choice had been too long delayed, and now they could bloom no more. A fainting breath of perfume was all that remained to tell of their wasted loveliness and decay.

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CURCULIO—A New Remedy.—A. P. Richardson, Norfolk county, Massachusetts, thinks that his success in preventing the attacks of the curculio is such as to warrant him in suggesting his plan to others. As soon as the trees blossom, their trunks are surrounded by cotton saturated with kerosene oil.—This is placed a foot or two from the ground, and the oil is renewed once or twice a week, as long as the curculio continues to appear.

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THERE is reason to believe that the emigration from Europe to this country this year will be nearly as great as in the year 1854, when three hundred thousand foreigners arrived.

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The First Premium Iron Geared Thresher is again offered by J. D. Linton, of Baltimore. He has been selling these machines for several years, which have given generally satisfaction. He executes all repairs and furnishes castings for the same. He is agent for the Brayley & Pitts Thresher and cleaner—Mellick, Withington & Co. 2-horse power thresher and cleaner—Hubbard's Reaper and Mower, rakes, plows, &c.

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CHOICE TOBACCO SEED.—D. Landreth & Son, 21 and 23 South Sixth Street, Philadelphia, are offering a new and choice variety of Tobacco Seed at one dollar per ounce, which is said to be superior for wrappers to that of the famous Connecticut Leaf. If what is said of this seed be true, as we have no reason to doubt it, the advertisement in another column of Mr. Landreth & Son, is of unusual importance to the tobacco growers of our section.

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SURVEYING AND CIVIL ENGINEERING.—Our friends in Somerset who have doubtless generally availed themselves of his services, need no further hint upon the subject, but those in other sections who need the assistance of a practical and skillful hand, we refer to the advertisement of W. F. Massey, Surveyor and Civil Engineer. Princess Anne, Md.

The Household.

To Protect Furs from Moths.

All furs—Russian sable, stone marten, fitch, Maltese, chinchilla, and colored—should be put away as soon as warm weather commences. A sure way to keep them is, to make newspaper sacks, double, large enough to lay the furs in without folding more than once to crowd or break them. Make the edges of this sack perfectly tight, by gluing with Spaulding's prepared glue, or stitched with needle and coarse thread all around. After you have applied the hot flat-iron where you think the moth has worked, and after your furs are thoroughly brushed and free from the moth work, put them in this paper sack, the ink on which has also the effect to preserve them. Then put this sack in a linen one, and hang up in your clothes-press, or some dark place, away from the flies in summer, and not store them away in trunks. Many use tobacco in putting up furs for the season, but there is always danger of the furs being destroyed, if that is used with them. If you prefer to put something in them, use camphor, or fine salt sprinkled through them. The risk of using tobacco is, there is an insect in the tobacco which is as destructive as the moth, so that this plant is not a safe one to use in any form, shape or manner.

HOW TO DRAW TEA.—A few years since, the writer took tea with a relative, and was delighted with the quality of the beverage. Upon inquiry, it proved that the article was from the same package used by another friend, whose tea always tasted miserably, and the difference was wholly owing to the methods used in its preparation. The last named person followed the usual plan of pouring boiling water upon the tea, which causes most of the aroma to escape with the steam. The other friend adopted the following process, which I have since practiced, and would recommend :—Pour tepid or cold water enough on the tea to cover it, place it on the stove hearth, top of a tea-kettle, or any place where it will be warm, but not enough so as to cause the aroma to escape in steam. Let it remain about half an hour, then pour on boiling water and bring to the table.

EXCELLENT FURNITURE POLISH.—Take alcohol, linseed oil, and strong vinegar, of each equal parts, shake well, and apply with flannel. The vinegar will remove all dirt and grease from the furniture, and by well rubbing with the above mixture, your furniture will always look as good as new.

The best rice is large, and has a clear fresh look. Old rice sometimes has little black insects inside the kernel.

A Place for everything, and everything in its place.

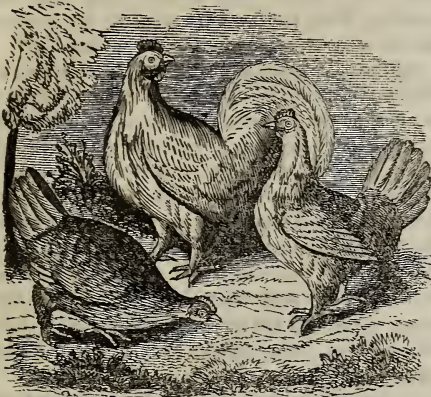
This motto should be adopted as a rule of life by every family. Much loss is sustained by failing to do so. How many little articles, such as knives, spoons, combs, &c., are misplaced and never found. All these count up and detract much from the family treasury. And then how much time—golden moments, more precious than jewels—is thrown away in hunting for them? Few, indeed, imagine how much. Let us calculate a little. Take a single medium-sized family and allow only fifteen minutes each day for each member, which is a very small estimate, and you have in one year an aggregate of two or three weeks. This is equal to several dollars—enough to pay for our paper for two or three years. This is only the loss of a single year. How great then would it be in ten or twenty years? But this is not all. One of the family might be taken violently ill at midnight, and immediate relief might save him from a long illness, and perhaps from death. But the candle is out of place and cannot be found, or being found, the matches are misplaced, and it cannot soon be ignited, or being ignited, the cordial and other medicines are not in place, and so the patient must suffer on, and run the risk of a long sickness, and perhaps of death itself. All this, and much more, is the results of not having a place for everything and everything in its place. Can not every mother, or the head of the household, see the importance, then, of adopting the motto as a rule of life? And cannot every daughter and child see the importance of adhering strictly to it? Let them see, then, that they do it. We will vouch that time will prove them amply compensated for the trouble.—*Rural American.*

INFLUENCE OF THE FIRESIDE.—The fireside has always been regarded as the altar of home—the seat of all the domestic virtues. Round that hallowed spot are supposed to be nourished all those tender feelings and sentiments which soften the harder features of humanity. There it is that the true father, the true mother, the true sister, and the true brother, are grown; and there it is that society looks for its brightest ornaments. No patriot or philanthropist, worthy of the name, ever sprung from any other soil, or was really moulded by any other influence.

NOBILITY IN THE KITCHEN.—In a recent English work called "The Gentleman," the author praises the housewifery of the Queen, and names a Duchess, Marchioness and Countess, who know how to use a stew-pan and cook an omelette. He says that unfortunately, at the present day, women of the middle classes have no care for anything but keeping up appearances.

The Poultry House.

BANTAMS.



WHITE BANTAMS.

The original of the Bantam is the Bankiva fowl, a native of Java, several specimens of which are kept by the Queen of England. These are very beautiful, of a perfectly white color, and exceedingly small size, and they exhibit some peculiar traits of habit and disposition that we cannot overlook. Amongst other strange propensities, the cocks are so fond of sucking the eggs laid by the hen, that they will often drive her from the nest in order to obtain them—nay, they have even been known to attack her, tear open the ovarium, and devour its shell-less contents. When such a propensity to devour the eggs exists in the male bird, the female is a secret layer. These birds are both good layers and sitters.

The fowl commonly known as the Bantam, is a small, elegantly-formed, and handsomely-tinted variety, evidently not remotely allied to the game breed. This bird is furnished with feathers to the toes. There is another variety ordinarily known as Sir John Sebright's fowl, which has its legs perfectly naked to the toes, and approaches in form more nearly to the game breed. The high-bred cock of this breed should have a rose comb, full hackles, a well-feathered and well-carried tail, a stately, courageous demeanor, and should not be quite a pound weight. The favorite color is a golden yellow, the feathers edged with black, the wings barred with purple, tail, feathers and breast black. The Bantam possesses high courage, and will fight with great resolution. The attitude of the cock is singularly proud and haughty; his head thrown back so as to nearly touch the upper feathers of his tail.—Pure birds of this blood are very rare.

The Creeper is also a very small variety of "Bantam," with short legs.

MANAGEMENT OF POULTRY.

Almost every family, however poor, have or can have its own chickens and eggs. And the following hints will prove useful to all such of our readers as wish to raise chickens successfully:

HEN HOUSE.—Your hen houses should be roomy, say 16 feet long, 10 feet wide, 10 feet high, where it leans against a stable, barn or wagon shed, and 7 feet high at its lower side. And its front face—which should face the South—should have glazed windows on hinges to let in the sun's warmth and light in winter, and for the admission of fresh air in summer. The hen house may, if desirable, be built at the end of the hog pen, or over it.

2. ROOSTING PLACE.—The roosting place of your hens should consist of a ladder-like frame, (whose slats are about eighteen inches apart,) that can be leaned against the rear of the house at any desired inclination. As the hens in roosting, always occupy the highest places first, this will bring them close together, and keep them warmer in winter. And in summer this ladder may be raised up to a level, so as to keep them farther apart and cooler. The floor should be made of stone, sand and lime, concreted or cemented together so as to form a hard and dry floor, and keep out rats. And a few shovelfuls of dry, pulverized clay sprinkled over this floor every week or two, will absorb all the moisture of the hen dung or droppings, and so keep the house free from bad odor.

3. BREED OF CHICKENS.—Carefully avoid breeding your chickens from the same stock of fowls, or from fowls closely allied to each other. For this will invariably produce a small, delicate and unprofitable stock, while cross-breeding of choice different kinds of poultry will just as certainly yield you a large, strong, healthy and very profitable supply of hens and roosters.

4. EGG NESTS.—The butter or lard boxes or tubs, procurable at any grocer's, put on shelves raised two or three feet above the floor, at the rear or sides of the hen house, make the best laying nests, as their well-soaked greasiness will keep the hen-lice entirely away, as no hen-louse, can live on or in grease. And hence it would, for the same reason, be well to give the entire roosting ladder an occasional greasing. And the boxes aforesaid should be frequently cleansed and supplied with fresh straw or hay.

5. YOUNG CHICKENS.—As the earliest hatched chickens, provided they have a dry, warm and sun-exposed house or coop, free from lice, generally do the best; the hens should be set to hatching about the middle of February or the first of March, but have fewer eggs than common, so that they may cover them well and keep them equally warm. And the young chicks should be kept off the cold ground

and out of the wet, and in a dry, warm place, and fed with warm food. If a setting hen looks pale about the head, it is a sure sign that she is lousy.—To remedy this evil clean out her nest—wash her eggs in warm water—and grease her under her wings and on her breast and belly, and put her back again, and feed her well, and she will soon improve and do well.

6. EGGS IN WINTER.—To make your hens lay eggs in winter, they must have clean, dry and warm house, and be fed on scraps of flesh or unsalted meat, fat, finely powdered bones, oyster shells and refuse lime, green cabbage leaves, &c., and have a proper supply of pure and unfrozen water to drink. Hot Indian corn, buckwheat and oatmeal, contain a large amount of heat-producing qualities, and so form the best winter food for laying hens.

7. GAPES IN CHICKENS.—Holding gapy chickens in or over tobacco smoke until they have inhaled smoke enough to make them sneeze two or three times, is said to be an infallible cure for this disease.

SUNFLOWER SEED.—Chickens are very fond of sun flower seed, which not only fatten them very quickly, but make their flesh very tender, juicy and fine flavored. And so it will be well for you to plant sunflowers in some corner of your grounds for this purpose.—*Ex.*

DUCKS.

No country place should be without some ducks, especially where a small run of water or grassy ditch for them to dabble in, as where there is an abundance of water they will find the greater part of their living. They are the most industrious of all the fowl tribe, and we have often gazed on them with wonder and admiration to see them sputter in shallow and dive in deep water. A drake and five or six ducks will cost but little to maintain them, and do incalculable and unknown service by the destruction of bugs, snails, worms and the larvæ of annoying insects. The only trouble they will give is that if there be much extent of water or marshes within their range they are liable to lay and sit abroad, unless they are constantly looked after and driven home at night and provided with proper shelter.—They should always have a lodging place of their own. A bedding of straw should be placed on the floor of their dormitory, and frequently changed.—Boxes for nests should be placed around in their houses or pen for them to lay in, and they should not have their liberty in the morning until they have laid their egg.

The duck, if well fed in the winter, will generally commence laying about the first of April, if they are lodged in a dry, comfortable place, as they should be. They must now be closely looked after, for

they are very careless, and deposit their eggs wherever they happen to be in the water, in shady and secluded places, even after having concealed them from the vigilance of the person who has care of them; they hatch them secretly, and some fine morning bring their young brood to the house to ask for food without requiring further trouble.

At the laying season ducks require particular attention, inasmuch as they are not easily brought to lay in the nests prepared for them as common fowls, but will stray away to hedges and other by-places to lay, and will even sometimes drop their eggs in the water. We have said ducks commence laying about the first of April, but so far from producing the limited number of sixteen eggs, some will lay as many as fifty, and even double that number. They do not usually continue to lay however later than June, unless they are very well fed, the great secret for rendering them prolific, provided they do not become too fat.

Ducks are not generally inclined to sit, but to induce them to do so towards the end of laying, two or three eggs are usually left in the nest, being careful every morning to take away the oldest, in order that they may not spoil. From nine to eleven eggs are allowed her, according as she is able to cover them. Incubation lasts thirty days; and the first broods are generally the best, because the warmth of summer helps much to bring them about, the cold always prevents the late broods from getting strong, and giving as large ducks.

FATTENING POULTRY.—The Irish Farmers' Gazette says, to fatten turkeys, feed with barley meal mixed with water, adding a turnip with the leaves on, or fresh cabbage for them to pick at. Geese and ducks are well fattened by giving them ground buckwheat or oats mixed with well boiled potatoes, given warm but not hot. Indian corn, well boiled and bruised, is also an excellent food for the purpose.

It is said that where the roosts and nests of fowls are made of sassafras wood, the fowls will not be troubled with vermin. It is well known that certain odors are very offensive to vermin. Pennyroyal rubbed about the head of a horse will keep off the blood-thirsty horsefly. Cedar wood boxes and closets are a sure protection against moths in clothing and furs. Sassafras roosts and nests upon the same general principle will protect chickens from being infested with lice.

GAPES IN CHICKENS.—A correspondent of the Dollar Newspaper, recommends saltpetre as a remedy for this disease common to chickens. Dissolve a tablespoonful of saltpetre in a quart of water, and mix their food in it, giving them the water when required for drink.